



F. Boucher inv.

Quos ego. Sed motos praestat componere fluctus:
Aeneid. Virg. Lib. I.

J. Taylor sculp.

A NEW

1478/19 *Last*
1-4

DIRECTORY

FOR THE

EAST-INDIES,

WITH

GENERAL *and* PARTICULAR CHARTS

FOR THE

NAVIGATION OF THOSE SEAS:

WHEREIN

The *French* NEPTUNE ORIENTAL

Has been chiefly CONSIDERED and EXAMINED:

WITH

ADDITIONS, CORRECTIONS, and Explanatory NOTES:

By WILLIAM HERBERT, HYDROGRAPHER.

~~~~~  
The FOURTH EDITION, with ADDITIONS.  
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L O N D O N,

Printed for HENRY GREGORY and SON, at N° 7, near the India-House,
in Leadenball-Street.

M.DCC.LXXV.

DIRECTORY

FOR THE

EAST-INDIES

WITH

PARTICULAR CHARTS

FOR THE

NAVIGATION OF THOSE SEAS:

WHEREIN

ORIENTAL



Has been chiefly Consulted and Examined:

WITH

Directions, and Explanations

BY WILLIAM HERBERT, Hydrographer.

AND ADDITIONS

TO THE

NAVIGATION

A D V E R T I S E M E N T.

Any Gentleman possessed of Remarks tending to advance the Improvement of Navigation, who will please to communicate them to the Editor, at his House in Leadenhall-Street, may depend on their being inserted in the next Edition of this Work, and the Favour gratefully acknowledged.

B O O K S, C H A R T S, and M A P S,

Printed for H. GREGORY and SON, near the India-House, London.

THE New Directory for the East-Indies; consisting of Twenty-six Charts, printed on thick Double-Elephant Paper, which, with Four other supplementary ones, were taken chiefly from the French Neptune Oriental: The Directions are printed on Royal Paper, in Quarto, and bound separately.

The following Charts have been added since the first Publication, and may be had separately.

The Osterly's Track, out and home, between Banca and Borneo.

St Mary's and Antongall Harbours at the NE. Part of the Island Madagascar.

The Ship Bute's Track through the Straits of Dryon, on two Sheets.

The following Charts, very useful for an East-India Voyage, may also be had separate, or bound up together with the New Directory.

The Great Atlantic Ocean, Three Charts.

The Azores, or Western Islands.

The Canary and Madeira Islands.

The Cape de Verd Islands.

Sundry Remarks and Observations made in a Voyage to the East-Indies, on board his Majesty's Ship Elizabeth, from the Beginning of the Year 1758, to the latter End of the Year 1764, with the necessary Directions for sailing to and from India,

and into the several Ports and Harbours thereof: Being a proper Supplement to the New Directory for the East-Indies, by William Nichelson, Master of the said Ship.

A Chart of the Harbour of Bombay, on eight Sheets of Imperial Paper.

A Chart of the Great Bay of Manilla, on four Sheets of Elephant Paper.

A Chart of Mathewrin Bay, on the North Side of the Island Diego Rayes, on four Sheets of Super Royal Paper.

A Chart of the Great Bay and Harbour of Trincamaly, on four Sheets of Royal Paper.

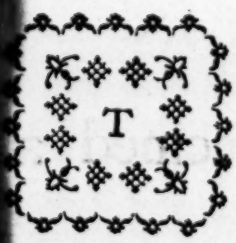
[These Four Charts were surveyed by Mr Nichelson; and may be had either in Sheets, or pasted on Cloth.]

A Chart of the Straits of Malacca, describing the Tracks that Ships formerly used to make, and that now practised: Also the Appearances of the most noted Lands seen in passing through these Straits; together with an Account of the Setting of the Tides, &c. on four Sheets of Royal Paper. Dedicated, by Permission, to the Honourable Court of Directors for the United Company of Merchants trading to the East-Indies. By William Herbert.



TO THE HONOURABLE
COURT OF DIRECTORS
OF THE
UNITED COMPANY
OF
MERCHANTS OF ENGLAND,
TRADING TO THE EAST-INDIES.

Honoured Sirs,

HE ensuing Treatise being intended as an Essay towards perfecting the *Navigation* of those Seas, the Safety and Improvement of which is of such great Consequence to so principal a Branch of the Commerce of these *Kingdoms*, as that whereof YOUR HONOURS have the *immediate Direction*, hopes for your Approbation and Protection.

B

All

DEDICATION.

All that has been set forth in the NEPTUNE ORIENTAL, has been carefully examined and compared with the particular REMARKS and JOURNALS of Ships in YOUR HONOURS Service, as also some Country ones, besides many curious *Manuscript Charts and Plans* I have been favoured with, as well as many collected during my Stay in INDIA; and I have occasionally explained, or where I have found Reason to *dissent* from that *Author*, have given my Sentiments in *Notes* thereon; and in some Places, where it may be supposed he has been unprovided with Materials, have made such *Additions* thereto as may prove useful.

I have also subjoined an APPENDIX, which consists mostly of REMARKS and INSTRUCTIONS for Places wholly *omitted* in other Works of this kind, particularly the NEPTUNE ORIENTAL.

In the CHARTS are inserted such *Banks, Rocks, and other Dangers*, and such *Alterations* made, as are grounded on good Authority.

This therefore, it is humbly apprehended, may be deemed a great Improvement of whatever has been hitherto published.

But as new Discoveries of Dangers are sometimes made in the most frequented Parts, I propose to *continue the APPENDIX*,
by

DEDICATION.

by inserting such Improvements from Time to Time as I may be enabled to make.

Permit me to embrace this Opportunity to return my most humble Thanks for YOUR HONOURS kind Indulgence in favouring me with all necessary Helps, and to testify the profound Respect and Gratitude, with which I am,

HONOURED SIR S,

Your most devoted,

and most obliged,

Humble Servant,

WILLIAM HERBERT.

EDWARD C. A. T. O. T.

by indicating such improvements from time to time as I may be

enabled to make.

I trust me to embrace this opportunity to return my most heart-

felt thanks for your kind intelligence in inform-

ing me with all necessary steps, and to reply the profound respect

and gratitude with which I am

Yours very truly,

EDWARD C. A. T. O. T.

1864

I am very much obliged to you

for the information you have given me

and will be glad to hear of any

improvements you may be able to make

in the future.

Very truly yours,

EDWARD C. A. T. O. T.

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P R E F A C E.

BEFORE the time the Portuguese had doubled the Cape of Good-Hope, the advantage which a trade with the Eastern nations in India would bring to Europe was little known, and 'till that time they had only ventured along the coasts; the great difficulty which they imagined might happen in traversing the vast Eastern Ocean, made them abandon the projects which they had formed of visiting these foreign places.

Those nations, who had their own interest most in view, were contented with drawing to themselves the profit of the trade carried on with Asia, by means of the Red-Sea, and the Persian-Gulf. Alexandria by this means was a very flourishing place; out of the ruins of which, Venice has since been raised from a small hamlet to one of the most opulent states in Europe: there went yearly large fleets from thence to the coasts of Asia-Minor and Egypt, where the eastern traders began to enjoy the great gains, which they found arise from the exchange given for their goods by the western people. That wise republic being convinced that she owed all her wealth to the situation of the place, and fleets which were yearly sent out, took all the pains possible to improve it, and in time established it so well as to oppose the force of several powers joined together, at different times, with a design to destroy it.

As the riches of India spread themselves over Europe, every one was ambitious of having settlements in a country, wherein Nature seemed prodigal in all things that might satisfy mankind.

The compass being now in use, emboldened the mariner to leave the coast, being certain to return back to the same place; he soon got the better of all the obstacles, which according to the general opinion served as hindrances to the ancients.

Some Normans and Biscayans, having adventured to the Canary Islands, about the end of the 14th century, and giving an account of the beauty and fertility of them, created a general desire for new discoveries: excited by this motive, John de Bethencourt, accompanied by several other Normans, in the year 1401, ranged the coast of Africa, as far as beyond Cape Non, made a descent on the island Lancerotta, conquered and fortified it; but finding himself too weak to subdue the rest, returned to France to ask for assistance. The troubles which at that time were in the kingdom (about the end of the reign of Charles VI. and during that of Charles VII.) filled too much their minds to undertake any foreign expedition. Seeing then his endeavours were in vain, he addressed himself to Henry III. of Castile, who supplied him with sufficient force to carry on his project, with the sovereignty of these islands, and the title of king, upon condition that he and his successors should do homage to the crown of Castile.

While the chief maritime powers of Europe were losing by their divisions and wars the advantages which might have been got by new settlements abroad, Portugal, one of the most inconsiderable among them, put herself in a condition to profit by it. They were long a prev.

as well as Spain, to the incursions of the Moors. This power was delivered first from them, carrying their victorious arms even into those barbarous nations.

The infant Don Henry III. son of John I. king of Portugal, taking advantage of these favourable circumstances, laid the foundation of the glory which in after ages his nation so deservedly gained. This prince was not only distinguished from other men by his superior genius, but also by his virtue and bravery: his love for the sciences evidently appeared, by his encouraging men of learning with his favour and liberality. He founded several academies for the instruction of youth, and gave part of his revenue for their support: in short, never did prince shew himself more attached to the love of arts and sciences than he did. Far from employing the leisure hours which the tranquillity of his kingdom afforded him, to pleasure and diversions, he betook himself to studies of different kinds, of which mathematicks was the chief; he quitted the court that he might give himself up entirely to it, and retired to one of his country seats, near the little town of Sagres, by Cape St Vincent's; and being accompanied with learned men, he executed all his projects which he had before began; endeavouring chiefly to perfect himself in navigation: the notions which he had of geography, together with the conversation of some Moors, who had penetrated very far into Africa, gave him a very favourable opinion of the settlements that might be made on these coasts: full of these hopes, the prince thought he could do no better for his kingdom, which was confined within very narrow limits, than to increase his power and wealth by new discoveries, and foreign settlements: these advantages, however great they might appear, were not the only ones which determined him; animated with a zeal for his religion, he was glad of an opportunity to propagate it, by converting many millions from Idolatry and Mahometanism.

The great ignorance of navigators at that time was the least obstacle which that prince got the better of: in order to dispose their minds for enterprizes of this kind, he was under the necessity of destroying their notions of the globe being divided into five zones, which doctrine the ancient geographers had established: between these zones they reckoned only two temperate or habitable; they thought those near the poles were inaccessible, by reason of the great cold at all times, and the torrid zones as a region of fire, where all was burnt up by the heat of the sun. This opinion, however ridiculous it now appears, was then the established doctrine; from thence proceeded the fears, and chimerical notions, which prevented them from making new discoveries: notwithstanding the pains he took to get good seamen, and the best of pilots; yet most of them, intimidated with the least appearance of danger, returned home; others contented themselves with landing on the Coast of Africa, on this side Cape Non; where they ended their voyage; so that he saw himself frustrated, for several years, of the hopes he had entertained of the success of his enterprize: but this did not make him abandon his design, using a surprising mildness towards his captains, concealing his discontent, and encouraging them by his promises.

In the year 1418, chance more than skill, or the courage of the seamen, made a discovery of the island Porto Sancto, viz. John Gonzales Zarco and Tristan Vaz, gentlemen of the infant's household, set sail for doubling Cape Bajador, when a tempest drove them off the coast, and threw them upon the Island, to which they gave the name of Porto Sancto when they landed, by reason of its affording them shelter, when they thought themselves near lost. The news of this discovery soon reached Portugal, and gave great joy. During their stay at Porto Sancto, they discovered Madeira, which lies near it; and they were sent to take possession of it: the largeness and fertility of the latter made them give it the preference: they sent people to inhabit it, with beasts, sugar-canes, and Malmsey vines. The care which was taken for the establishment of these islands, was the cause of the delay of those on the coast of Africa, beyond Cape Bajador, which Gilles Anes doubled in the year 1433. Seven years after that, Anthony Gonzales and Nugno Tristan landed at Cape Blanco. Those that afterwards went beyond this, by their discoveries overcame the prepossessions of the people about the impossibility of penetrating into the torrid zone; and the great gain they had made with the

people of these countries, appeased the murmurs of several of the members of the government, who were already resolved to abandon these enterprizes, which, without any profit, cost the government immense sums.

In all times such persons have been found enemies to all new schemes, whatever profit might be expected from them: those who fix their minds on the immediate success of their enterprizes, count as nothing the distant fruits which may be reaped from them. How many states have not their mistaken policy brought to the necessity of carrying, even to their enemies, part of those riches, which they might have kept, if they had but courage and constancy? Don Henry, without minding the reasons which they employed to turn him from his design, continued very attentive to it; but he had the misfortune of all eminent men, whom death seizes in the middle of their projects. He died in the year 1463, and 67th year of his age; and Portugal was deprived of a prince, whose study was the good and interest of his kingdom.

John II. his nephew, being at length king of Portugal, considering the advantages of the trade with Africa, entered into all the designs of his uncle, being very assiduous in making new discoveries. It had been pushed as far as Cape St Katharine, situate in 2° south latitude, during his father Don Alphonso's life; and as far as the river Zaire, in the first of his reign; but his chief design was the discovery of the East Indies. The geographers, which he had about his court, assured him it might be easily done, by sailing round the coast of Africa: they supported their opinion by a chart which the Moors had given Don Henry, which was sufficient to confirm the king in his resolutions.

Another motive was the idea all Europe was filled with, of a mighty Christian monarch, better known by the name of Prester John, than by the situation of his dominions. Don John was resolved to spare no pains to discover who this prince was: he sent for this purpose Peter Covillan and Alphonso de Parva, who took their journey by Alexandria, and through Arabia, as far as Aden; from whence the first passed on to the Indies, the other to Ethiopia; but Covillan returned without having discovered any thing, and Parva died on the road. Don John dispatched others by sea; these were Bat. Diaz, and John Infant: each had the command of a ship, as well as a storeship, to prevent the pretence of returning for provisions, &c. Their orders were to sail round the coast of Africa, from the river Zaire, and make discoveries, to enquire very particularly where the should go to the kingdom of Prester John, and to set up flags every where, as a mark of possession. An obstacle, which should have been prevented, hindered these navigators from discharging their commission. The negroes, who served them for interpreters, did not rightly understand the language of the new countries on which they landed: nevertheless Diaz coasted along, and came as far as a cape, which appeared to him to set bounds to the coast of Africa; he gave it the name of Cape Tormentos, by reason of the tempests and large seas he found near it. His zeal would have carried him still farther, but his crew mutinying, obliged him to return to Portugal, where he arrived in December, in 1487, sixteen months and seventeen days from the time he first set out. He was very well received by the king, and the name of Cape Tormentos changed into that of Good-Hope, intimating the great hopes they had from this discovery. Ten years passed away, without any notice being taken of it; and the prince died, at the time when the preparations were making for the improving their discovery. Emanuel duke of Beja succeeded him, and under his reign these discoveries were brought to perfection. When he came to the crown, the good of his nation became his chief study, and he was resolved to establish a new dominion, rejecting the advice of some of his courtiers, who were averse to all schemes of this kind.

He fitted out three ships, of a much stronger make than ordinary, with a pink, which was to serve as a storeship. The late king had appointed Vasco de Gama to command this expedition, Don Emanuel, persuaded that the success of his enterprize depended on a proper chief, approved of him, he being a man of fortune, merit and capacity, great courage and daring intrepidity. There went in company with him his brother Paul de Gama and Nic. Coello.

The king on their setting out told them, he hoped their conduct would confirm his good opinion, animating them with the promise of great rewards: he then gave Vasco his instructions. They embarked amidst a numerous concourse of people, who were all in tears, being persuaded they were so many victims going to certain death, according to the terrible account Diaz and his companions had given of the Cape of Good-Hope. They sailed from Lisbon in July, 1497. Vasco directed his course towards the Canaries, then towards the Cape de Verd: he landed and refreshed his men at St Jago; from whence he steered south, to cross the equinoctial line, and fell in with the coast of Africa; but not knowing how to make a proper use of the winds which blew in that hemisphere, he spent four months before he arrived in the bay of St Helena, where they took in fresh water, and then set sail for the Cape of Good-Hope.

The season of the year not being favourable, they met with contrary winds and currents, which had very near obliged them to return back. The mutinying of the crew would have been sufficient to have overturned all their measures; but Vasco, indefatigable amidst the greatest dangers, surmounted the first of these by his knowledge in navigation; the other by punishments, which he inflicted on the chief of the mutineers. He doubled without any accident that famous cape, November 25, 1497, from whence he went into the bay of St Blaze, which is about 60 leagues beyond the cape. He had a design to stay a while at this place, but found some difficulty in getting refreshments: he therefore went to a neighbouring harbour, and stayed there till the 18th of December. A few days after he left this place, he met with a violent storm, which he had the good fortune to get the better of; and on Christmas-day following he made the coast again, which he called Nativity, as was the custom when lands were discovered on any particular day: for the same reason, he gave the name of King's river to a large one, which he entered on the Epiphany of the following year. Other travellers gave names to those places they landed at, according to the nature of the inhabitants.

Beyond this bay, the land forms a promontory, which is the south extreme of Safala. Vasco had great difficulty to double it, on account of currents, which set in upon the shore. He was therefore, for fear of being shipwrecked, obliged to stand off the coast of Safala, and did not make the land again, till he was near the mouth of a river which he named Bons Signaux, because of the good intelligence he received there. The people of that country were more civil than any others he had met with: they made him understand (by some Arabian words) if he kept towards the north, he would meet with white men, and ships such as his own. This animated them with new hopes, being now tired with only meeting forlorn creatures, whom they could not understand, neither procure from them more than would just keep them alive. A disease to which they had been entire strangers, began now to rage amongst them, (namely the scurvy) of which some died, but most recovered.

After having refreshed and refitted the ship, they went to Mosambique, where they arrived in a few days. This little island, situate near the continent, and which the Portuguese now make one of their chief settlements, was almost entirely inhabited by Moors, who had made use of it in their trade to Safala, Ibrahim, king of Qujloa, kept a governor there, in order to command and preserve the trade. When this governor saw the ships of Gama, he sent an officer to enquire what they were, and finding them to be Portuguese, formed a design to destroy them; and in order to succeed, he thought it best to use dissimulation: he kindly received those who were sent ashore, promising them all in his power, with two pilots to conduct them in, or where they had a mind to go. These measures were scarcely concerted, when they began to see into their bad designs. The complaints which Gama had made to the governor, of some outrages that had been committed on some of his people, being rejected by insults, and followed by a shower of arrows, made the general fire several shot at the village: the governor by this means became more civil, granting to Vasco every thing he demanded, and also a pilot to conduct him. After which he set sail. They suspected their guide might be treacherous, so that they resolved either to intimidate him by threats, or bring him over by promises; but they soon discovered his design, by running

running the ships between the islands and the rocks, on which they would infallibly have been lost, if they had not been on their guard. The admiral, being convinced of the perfidy of the pilot, whipped him severely with cords, which made him repent of his breach of trust, promising to conduct the ship to Quiloa, a considerable city, where he assured them they would find all sorts of necessaries: The pilot made no doubt but they would very soon know there what had passed at Mofambique, and would undoubtedly revenge it; but the wind not favouring them, he thought it best to go to Mombasse, where he made them hope for the same supply as at Quilola. Mombasse, at that time, was subject to the Moors, who had their king independent of that at Quilola; it was very populous and flourishing; situate in a deep bay forming a very good port, on each side of which was a well built fort; the houses, being built with stone, in a pretty taste, afforded an agreeable prospect. To avoid giving surprise, Vasques did not think fit to enter immediately into the port: He anchored in the road, that he might observe what passed in the town, and so be able to take his measures. The king sent an officer to compliment the admiral, on his arrival, with a tender of his service. After the first compliments, the messenger told him the great inconveniency which would attend his ships in an open road, such as where he lay, saying it would be much more convenient, as well as safer, to go into the port. Gama to prevent suspicion promised it; but deferred the execution, under specious pretences. Notwithstanding the care which the Portuguese took to hinder the pilot from having any conference with those of Mombasse, he found means to inform them of what passed at Mofambique, so as to inspire them with notions of revenge and hatred. Then they meditated to take the ships; but as it was difficult for them to bring it about, if they did not come into the harbour, they therefore redoubled their arguments to persuade them to this. The admiral, sufficiently informed of the state of the harbour, and strength of the Moors, at length determined to go in. On the day appointed for this purpose, great numbers of country boats finely adorned, with instruments of musick and armed men, came before the ships, as if to pay their respect: Several of the Moors came on board, notwithstanding the care that was taken to hinder them, seeming very well pleased with the preparations for weighing the anchor, and believing themselves already masters of their prey; when an odd accident, all of a sudden, destroyed their hopes and turned them into fear. The admiral's ship, being under weigh, did not answer her helm, whereby she sheered so near some rocks, that he was obliged to come to an anchor, and furl his sails: The Moors seeing them in a great hurry, suspected they were discovered; and, fear seizing them, they immediately jumped overboard to get to their boats. Vasques, by this, discovered his narrow escape; and as the Mofambique pilot had got away from the ship, he concluded it to be through his means that the Moors had taken these resolutions. He thanked God for his deliverance, and then set sail, to seek protection in some other port. Some days after his departure he took two boats going to Mombasse, which served his purpose: At his approach most of the Moors in the boats jumped into the sea, but some remained, who gave him necessary instructions: They told him, he was not far from a city called Melinda, the king of which received courteously all strangers; that he might get provisions there, and pilots to conduct them to the Indies. In this hope, guided by their prisoners, they steered their course for the place they told them of. He found Melinda to be a neat city, situated in a plain surrounded with gardens. As soon as the admiral was come to an anchor, he sent a messenger to compliment the king, and inform him of the reason of his voyage: This prince was a venerable old man, of a mild and affable carriage, and singular probity: He seemed pleased with the arrival of the Portuguese, especially when they told him that an European monarch was seeking his protection and friendship. The regard due to sovereigns, demanded that Gama himself should visit the king; but as he had already proved, that the seeming friendship of the East is not much to be depended on, he delayed going ashore. The king himself by his great age and infirmity being confined to his bed, the prince his son came half way to the ship, to confer with the admiral: and both exchanged the greatest marks of friendship,

ship, the sincerity of which the event sufficiently shewed. There were then in the harbour of Melinda four India ships, in which there were some Christians of St Thomas, and a Moor of Guzurat, very skilful in navigation. Vasques, in the conference he had with them, learned several important things as to his expedition. He shewed them his Astrolabe (a), by which he observed the latitude; the use of which was begun under the reign of John II. They did not seem surpris'd at it, but shewed him something more curious of the same kind, which was common among the Arabians, who sail'd in the Red-sea. The Portuguese have omitted giving any account of this method. Some pretend that Vasques learned from them the use of the Loadstone. I do not believe this opinion, for whatever other discoveries we may owe to the Portuguese, yet it is certain the virtue of the Loadstone was well known in Europe two centuries before.

During the stay Vasques made at Melinda, they received from the inhabitants all manner of refreshments, which contributed greatly to restore them after their fatigue. The prince, to give them some mark of his friendship, procur'd a pilot to conduct them safe to India.

Every thing being ready for his departure, Vasques with the two other ships sail'd, and in 19 days, having favourable winds, he descried the mountains of Calicut, and anchored in the road the day following, being the 18th of May, 1498, ten months and a half after his departure from Lisbon, to the great joy of all; for which they return'd God thanks.

Calicut was at that time a very considerable city, the metropolis of a powerful empire, which has now lost all its ancient splendour. The samorin, to whom it still belongs, formerly was one of the chief princes of Indostan. The kingdom is situate along the sea-coast of Malabar, where there was a very great trade, which brought immense riches to Calicut, where they lived in all the pleasures of luxury.

Gama, on his arrival, went to pay his respects to the emperor, and acquaint him with the cause of his voyage. The interest and self-conceit of that prince was too much flatter'd not to receive a favourable answer. He gave orders for receiving the admiral, and shewed him all marks of honour, usual to ambassadors from the most powerful kings. The day appointed for receiving him being come, he was conducted with great pomp to the palace, and from thence to the hall of audience, where the emperor waited for him. After the first compliments were past, he desired him to deliver his credentials to any of his ministers that he thought fit. Gama thinking the honour of his master was here concern'd, refus'd to comply with it; representing that kings ought to commune directly with kings, without the interposition of ministers of state. The samorin being inform'd of this delicacy, retir'd with some of his officers to a private apartment, and sent for the admiral: They read the letter from the king of Portugal; and the prince, to whom it was explained, answer'd it in most obliging terms: But there was one essential thing wanting, namely the presents, which were always sent by ambassadors to Eastern Princes, before whom it is not the custom to appear empty-handed. Vasques excus'd himself, by the uncertainty of his arrival in India, adding that it was near 100 years since they had been finding out a passage, and had been always before this time forced to put back; that if the king of Portugal had known his fleet would have succeeded this time, he would not have fail'd to have sent very considerable presents. This excuse seem'd to satisfy the emperor; and he order'd the ambassador to be treated with particular marks of distinction, for facilitating of commerce, and what else he might want. The Moors were displeas'd with the arrival of the Portuguese in that country, for it was through them Europe receiv'd the greatest part of the riches from this country, they did all in their power to prevent this commerce, and gain'd over to their interests, by bribery, the chief ministers of the samorin; so that the court all of a sudden chang'd their behaviour towards the Portuguese, and consider'd them as no better than pirates, and made use of their indigence as a proof. Vasques was inform'd of the design which the Moors were carrying on against him, by one of their party, on whom he could much rely, nam'd Monzaed, a native of Tunis; who acted as

broker

broker at Calicut, and was attached to their interest from their first arrival: He spoke the Castilian language perfectly well, and served as an interpreter; he was very zealous in all their affairs; and his fidelity was very conspicuous, in letting the Portuguese know the designs the Moors had formed against them. Hereupon Vasques determined to depart; but as an affair of this nature requires much delicacy, he at length obtained leave, upon leaving a pledge for his return: He likewise got a letter from the samorin to the king of Portugal. He first went to the islands of Anchediva^(b) to careen, and take in water; and then steered for the coast of Africa; but he made not so quick a passage back as he had done coming; being delayed by calms, so that he reached Magadoxa with great difficulty: Sailing along the coast, he put in at Melinda, where the prince again received him with great marks of esteem, and sent an ambassador to the king his master. From Melinda, the fleet came back the same way. In passing Mosambique, one of the ships called the St Raphael struck on a sand bank, near the Island St George, and was lost; the crew were saved, and put on board the other two ships, which steered from the Cape of Good-Hope: They doubled it in March 1499; the season being then more favourable than before. They then having got the better of this terrible passage, were now expecting to taste the fruits of their native country. They steered for the equator; fell in with the Islands of Azores; and refreshed at that of Tercera. Vasques had the grief to see his brother die at this place, whose good qualities made him universally regretted. They at length arrived at Lisbon, in the month of September; after having been out 26 months. The scurvy and other disorders had so weakened his crew, that out of 170 men which set out, only 55 returned to Portugal. Nic. Coello, who arrived before him, had already informed the king of the success of the voyage. That prince sent down all the nobles of his court to meet Vasques, and ordered his return to be celebrated by publick rejoicings. He made him count of Vediguiera, and admiral of India; and added a pension of 1000 crowns. Those who accompanied him were also greatly rewarded: and to perpetuate the memory of his discovery, he built a stately church, and dedicated it to the Virgin Mary. They now found it possible to sail from Europe to the East-Indies, and by the accounts of the beauty and riches of that country, they were confirmed that a profitable trade might be carried on. They then fitted out a large fleet, and embarked a sufficient number of able men, to resist those who should oppose their settling: They added to these wise measures all that could bring navigation to perfection; for on that depended all the advantages of this discovery. By these precautions they saved the lives of many. Hitherto I have only spoke of the different expeditions made towards this discovery: I shall now give an account of the progress made in navigation, and at the same time let you know what new methods I have taken in this work for its use and advantage. The knowledge of the loadstone, and use of the mariners-compass applied to navigation, it is true, has been of great use to bring it to perfection; but it was not sufficient to supply all the difficulties to be met with in long voyages: By it the pilot could shape his course; but the distance always remained uncertain, being only calculated by estimation: It was only after the use of the Astrolabe to observe the latitude, that there was a possibility of correcting the errors of navigation in long voyages; and there was yet another thing wanting, equally necessary for instruction and safety; that was, representations of the sea-coasts, islands, &c. that the pilot might continually see before his eyes his true course, and so be able to shun the danger. These reasons gave rise to hydrographical charts, of which the Infant Don Henry was the first inventor. The geographical maps, known long since, helped them in this, but then it was with difficulty they could make use of them, because their use was above the knowledge of most of the common navigators. These first sea-charts are those which have since been called plain charts, to distinguish them from those now made use of; and because in their construction they have no regard to the convexity of the globe, but the portion which they comprehend is reduced to a plain surface; the meridians being represented as straight lines parallel to each other, and the degrees of longitude equal, upon every parallel, to the degrees in the equator. Every mariner

(b) Or India Diva.

mariner took care to insert in his chart all new discoveries, the latitude he had observed them in, with all the bearings of the coasts, together with the sand banks or rocks, which he met with.

Navigation being now of such extent, the size of the former charts were not sufficient to contain all the seas which they had to run over; to remedy this they were obliged to make the scale less, but this reduction made the objects confused, or at least too small to be of use; which determined them to make charts of particular parts on a larger scale: These last were not only useful, but absolutely necessary to those who sail along coasts, or through straits which require more ample description: By these means, although they made navigation more easy, yet they had great faults; one was, that the principle on which the charts were made was erroneous; and the difference of longitude of the chief ports was not exactly known. To prove the former, take notice, that the meridians of the globe are circles, which intersect each other at the poles, making the degrees of longitude smaller, in proportion, as they are distant from the equator; whereas in the plain charts, as I have already observed, the meridians are supposed to be straight lines, and the degrees in every parallel equal to those of the equator: This error indeed is not so considerable in the torrid zone, especially when the charts do not comprehend any great space, but otherwise it is necessary to take notice of it; for which reason the navigator, that he may not be deceived in his reckoning, must reduce the leagues of departure into the degrees of the parallel on which he sails, and, if the course be oblique, of the middle latitude, between the place of his departure and that bound to.

Among the various methods made use of to correct these charts, that now in practice is the best, and has with justice been preferred to any other: It consists in augmenting the degrees of the meridian in the same proportion as those of the parallel diminish: Every degree of latitude thus augmented becomes the just measure for reducing the degrees of the equator, answerable to those of its corresponding parallel (c).

You must not confound, with the plain charts, those which determine the distance, upon any parallel, by one common measure; because a certain number of leagues taken on the equator are always equal to the same quantity taken on any parallel whatever: In the use of these last, they do not account by degrees of longitude, but make use of them only as a scale of leagues, to measure the distances on the parallels of latitude.

It is not so easy to remedy the second fault of the charts, the consequences of which are more to be dreaded: For besides that the first was known, the mariner had rules to correct it by; but in the other he was uncertain of the true longitude of the places bound to: The methods of observing it were not common, and for the most part above the capacity of the navigators of that age: The hydrographers were obliged to deduce the longitude from the course and distance, which they obtained from ships journals; but this being uncertain, became more so as the length of their voyages increased: and though in time their charts were more correct; yet the astronomical observations made in different places, shew us that they are still full of errors, and want new corrections.

After the Dutch had taken most of the Portuguese settlements, their chief care was to procure their charts, and to make new ones of all those ports where they had any trade. This republic, ever mindful of its own interest, knew full well that on the improvement of this article depended the success of all their voyages; but still, whatever care they took to make these correct, they remain very imperfect; and one cannot but admire how a nation, whose navigation is so considerable in this part of the world, should to this day trust their lives and fortunes on performances so imperfect. Of those that are published, the general chart by Peter Goos is esteemed the best, which most of their navigators still make use of: As for their particular charts, they are mostly manuscripts.

(c) An explanation of this method at large may be seen in the Philosophical Transactions, No. 219, which, though generally called the Mercator projection, is therein attributed to the discovery of Mr Edward Wright.

The Portuguese and Dutch are not the only charts we have of the Eastern ocean: The collection by Thornton, commonly called the English Pilot, although deficient in many places (as I shall hereafter make appear) is much esteemed by navigators, as it contains several charts of the coasts on a large scale; nevertheless the latitude and bearings of many considerable places being very faulty, it requires to be corrected: It was in vain to wait for a more correct edition, that of 1734 differing from the old ones only in the addition of two or three more charts.

Being therefore convinced by my own experience, and the authority of all navigators, of the faults of each of these, and the necessity of composing some more exact; I undertook this work, after having collected all the remarks and instructions necessary thereto.

As astronomical observations (provided they are exactly made) are the surest methods to fix the situation of places, those have been made choice of which have been proved most correct, and not trusted to any that were doubtful: Besides, I have collected several very particular charts and plans of every part, and carefully compared them with the remarks and journals of the most experienced seamen, using this navigation: In short, after having collected many journals, and compared them with one another, I abridged the courses, giving particular attention to the latitude observed in sight of land, and its bearings; whereby I have corrected several latitudes, bearings and distances, as badly laid down in these plans as the ancient charts: It is to be considered therefore, that in the making these new charts, three methods have been used to determine the situation of places; the first is astronomy, founded on the best observations; the next may be called geography, which consists in fixing by triangles those places which have not been observed, with those whose situation is certain; this method has been made use of along the coasts, by observing the angles which the several capes and noted points make with each other, or with the meridian line; and this gives the situation sufficiently exact: The third method is more uncertain, but which I was forced to have recourse to for want of either of the former; it is that deduced from the track of ships. My constant attention, in the several voyages I have made to India and China, to all the observations that might yield any advantage, authorises me therefore to join those of my own; yet without giving the preference to my own judgment, unless truth obliges me to it; and when I have compared my course with others, it was only with a view to rectify them, when necessary.

All this put together, I think I have justified the construction of my charts, as well general as particular. As to those about which I am not so certain, I always acquaint the navigator therewith. It may be proper here to take notice of two objections, which some persons, who have some knowledge of observations taken at sea, may make: One is, that the latitude of the same place, observed with two instruments of the same kind, is not always the same; from whence there may be reason to suspect the justness of the instruments, and consequently errors in most of the latitudes in those journals: The other, that most navigators do not take sufficient care in setting the head-land, &c. (*d*). I answer to the first, that before giving the latitude of a place observed by a navigator, I examine if that which has been made during the course of the same voyage, in sight of some place whose situation was exactly known, agreed with it, or if it differed, how much; besides, I never trust a single observation, but compare several together: As for the bearings, the choice of authors, and the agreement of several bearings from different stations, are my chief vouchers.

I wish I could have had sufficient authorities to have included the Southern part of Africa, from the Cape of Good-Hope to the equator; but besides (*e*) that the longitude of the cape has not

(*d*) The bearings should be taken with an azimuth compass: The method of those mariners, who content themselves with using the common compass, is very blameable. The inaccuracy thereof renders useless the principal means of detecting the errors of charts, and the correcting of them.

(*e*) The astronomical observations made at the Cape of Good-Hope, in 1685, by the missionaries, who determined the difference of meridians between it and the Royal Observatory at Paris, to be 1 h. 10' 45" or 17° 41' 15" is not sufficiently certain to be depended

not been justly determined, I have not found sufficient authorities for describing the coasts of Sofala and Zanguebar; so that I was obliged to confine myself to the Indies and China.

The different parts of this work are exhibited in two general charts: one contains the coast of Africa from the equator to the straits of Babel-Mandel, and the coast of Asia from thence to the mouth of the Ganges; the other contains the gulf of Bengal, with all India in general: I have added to these, plain charts on a large scale, of every particular coast, gulf and straits; to render these last more useful, I have drawn meridian scales on the sides thereof, that the navigators, who commonly make use of the general charts in long voyages, may the more easily transport their point of situation.

The first meridian of these English charts, has been fixed at London, for the use of the English navigator; and also from the Royal Observatory at Paris, because the astronomical observations correspond therewith: Those, who would place their meridian elsewhere, may do it, by only adding or subtracting accordingly. In order to render the work more complete and useful, I have added this new Directory, with instructions for every particular voyage. The memoirs above mentioned have enabled me to detect several errors in the ancient directories; and I have advanced nothing without authority, chusing rather to be silent, than impose on those entrusted with the care of ships: The entire approbation of two able navigators (f) assures me already of its accuracy. I have, now and then, added remarks on the alterations I have made to the ancient charts; there are also some considerable ones which I have reserved to treat on in this preface; and whereof I am about to relate. The unanimous approbation of geographers, as to the determination of the longitude of Goa, made me make it the standard in the construction of my first chart. That city lies $71^{\circ} 25'$ E. from the Royal Observatory at Paris; agreeable thereto I have fixed the other places on the coast of Indostan, according to their bearings and distances; as the longitude of Surat, and Cochien, which result from this method, agree with the determination of Mess. de Lisle and Harris. I think myself bound, at this time, to make use of the judgment of these two skilful geographers, and thereby have demonstrated the errors of the ancient charts of these parts. Peter Goos, in his chart of the Eastern seas, places Goa in $96^{\circ} 55'$ E. longitude from Teneriff, which answers to $78^{\circ} 55'$ from Paris, being $7^{\circ} 30'$ more Easterly than it really is: This error, although considerable, is not so much to be wondered at, when you reflect on the distance between the places, and the method made use of for the determination: The other parts of that chart are not more correct; the short distances and bearings of coasts the most frequented, although easily known, are yet more incorrect; as for example, that author makes the meridian distance between Goa and Cochien only $1^{\circ} 30'$ instead of $2^{\circ} 20'$, which the bearings of the coast, and the difference of latitude naturally produce; hence most navigators reckon themselves almost ashore, by that chart, when they are not really in sight of land.

In like manner, just to hint at the errors of the common English charts, as to the longitude of the same places; they must be wrong, seeing they are plain, determining the meridian by the

depended on. The fathers seem to agree, in the advertisement put at the end of the seventh volume of Memoirs of the academy of sciences, that their observation is too uncertain, and nothing at all decisive. M. Halley, far from believing it exact, thought that it should be but $55'$ at most; so that, agreeable to the opinion of this judicious astronomer, this cape should have been $3^{\circ} 56' 15''$ more Westerly than by the observation. But since, according to several astronomical observations, in 1718, he thought proper to fix this longitude $1 \text{ h.} = 15^{\circ} \text{ E.}$ of London, which will be $50^{\circ} 20' = 12^{\circ} 35'$ or thereabouts, in respect to the meridian of Paris: The difference is considerable enough to require new observations. Although reasonably prejudiced against the exactness of the ships tracks, yet as several who have sailed from the cape to St Helena appeared to me to agree with one another, I thought it practicable by means thereof to procure a medium. In fact, we find by these, from $23^{\circ} 15'$ to $23^{\circ} 45'$ the difference of longitude between these two places. Now the above Dr Halley having, by several observations compared together, determined the situation of St Helena $8^{\circ} 30' \text{ W.}$ of Paris; if from $23^{\circ} 30'$ the middle difference, you subtract this last, because it lies West, there remains 15° for the longitude of the Cape of Good-Hope, East of the Observatory; which makes $17^{\circ} 25'$ from London, allowing the difference of meridians $9^{\circ} 40' = 2^{\circ} 25'$ as above. But since that time, the Abbé de la Caille, who resided at the cape, from May 1751 to Jan. 1753, in order to make astronomical, &c. observations, by command of the French king, has concluded the longitude thereof to be $16^{\circ} 10' \text{ E.}$ from Paris; so that according to the same author, who observed the difference of longitude between Greenwich and Paris, to be only $2^{\circ} 10'$ the true longitude of the Cape of Good-Hope will be $18^{\circ} 25' \text{ E.}$ from London.

(f) M. de la Garde, jasper officer of the king's ships, } commanders of the French India company's ships.
M. De Fremeri, — — — — —

the bearings; but the little use of these is the reason that I have only related some few of the errors thereof, which I have compared with those of the same kind in my collection. In these charts, the bearing of the coast from Cochien to the entrance of Goa, is NNW. so that there is $2^{\circ} 20'$ difference of longitude, and $5^{\circ} 33'$ difference of latitude; whereas in the English Pilot it is $N 18^{\circ} W$. which gives $37'$ less meridian distance between them, making thereby Cochien $37'$ more to the Westward than it really is.

It is not only in the bearing of places that they have erred; the latitude on which the navigator most depends, is also erroneous; Goa is placed in $15^{\circ} 13'$, whereas the astronomical observations make it in $15^{\circ} 30' N$. The latitude of Surat, instead of $20^{\circ} 56'$ ought to be in $21^{\circ} 10' N$. and its longitude $22'$ more Easterly, with respect to Goa.

I shall not mention any more of these errors here, that I may not swell this preface beyond due bounds; but shall give them more full in my Directory, I shall only mention, that the chart of the gulf of Cambay and the coasts Guzurat and Concan, as they are on the large scale, were communicated to me by a very skilful navigator (g) of these parts. I have taken great care in marking the soundings which are not in most charts, and which I observe the English Pilot has not marked depth enough, near the coast.

All the ancient charts represent the Laccadives and Maldives as a confused heap of islands, very different both in number and shape from what they really are: Since numbers of ships pass through the channels of the former, they are better known, and an exact draught has been made of them, to which I have confined myself: I have also had experience myself in the latitude and distance of the islands, which bound the passage of Mamale to the Northward: They appeared to me to be pretty exact, only that of Malique, the situation of which is still uncertain. The opinions of some mariners have made me place it as in my chart, but a navigator (b) whose authority may be relied on, has assured me, that after he had run over that parallel of latitude, he did not see any appearance of it; whence I conclude it must be more to the Southward, and consequently nearer the Island Kelay. The voyages made every year to the Maldives, by several ships, French, English, and Moors, to trade for cowries (i), afford me sufficient materials for making a particular chart of these innumerable islands, whereof the Eastern part being most frequented is consequently better known.

The situation of Pondicherry in $11^{\circ} 55' N$. and $78^{\circ} E$. from the Royal Observatory at Paris, is the result of several astronomical observations, which have been made by F. Rigand, Tachard, and friar Morisset, Jesuits. This town, thus adjusted, serves to determine the other places on the East coast of Indostan, as far as the mouth of the Ganges, as also a part of the Island Zeloan

It were to be wished there were some astronomical observations on the coasts of Arabia and Persia, to adjust their exact situation: For want of these I have been obliged to have recourse to the working of ships tracks; but to supply the defects of this method, attended with its uncertainty, I have chose the shortest voyages, as less liable to errors, than those that are longer: I have also preferred those made at the beginning, or towards the end of the monsoon, to those made whilst it was in its force, to avoid the great difference by currents: Likewise I have made use of those journals whose latitude observed and latitude by account agree best with each other.

Although the ship's course may be more accurately determined than the distance run, yet it is not possible, otherwise than by the latter, to know the distance between two places under the same parallel: In this case, and where the course makes very acute angles with the parallel, I have not confined myself to this method only, but have taken the runs of several ships, sailing from different ports, that by their intersections I might be more exact.

Thus out of a great number of journals, having made choice of those which I found most correct, and reducing their tracks as abovementioned, I have concluded the following distances:

From

(g) M. des Jardins, *maître attenant* of Pondicherry. Bengal and Guinea.

(b) M. De la Garde Jaser.

(i) A shell, which passes for money at

From Cochien to Cape Guardafoy the course is $W4^{\circ}30'N$. 466 leagues, which gives $23^{\circ}40'$ difference of longitude: Now the longitude of the former being $73^{\circ}40'$, that of Cape Guardafoy must therefore be about 50° . By another operation, I found that the Easternmost point of the Island Soccatra bore from Cochien $W16^{\circ}N$. $408\frac{1}{2}$ leagues, which makes the difference of longitude $20^{\circ}40'$, by which that point must lie in 53° . And as the difference between that point and Cape Guardafoy is 3° , there remains 50° for the longitude of the latter; as in the preceding article. From Bombay to Cape Guardafoy, two ships made their course $S.68^{\circ}30'W$. and $S69^{\circ}30'W$. the medium being $S69^{\circ}W$. cuts the parallel of $11^{\circ}45'$, which is the latitude of the cape, in 50° of longitude as before: In like manner Cape Aden bears from Cochien $W4^{\circ}N$. $584\frac{1}{2}$ leagues. From Mount Dilla, on the Mallabar coast, in latitude $12^{\circ}03'N$. and $72^{\circ}39'$ longitude, to the above mentioned cape, it is $W1^{\circ}N$. $558\frac{1}{2}$ leagues. From Cape St John's to the Burnt Island or Garbora, $S68^{\circ}30'W$. 482 leagues. By the two former, Cape Aden lies in longitude $43^{\circ}58'$, or $6^{\circ}02'$ West from Cape Guardafoy; and by the latter, $46^{\circ}08'$ is the longitude of Burnt Island. I shall now take notice of two errors in the ancient charts of this part of the entrance of the Red-sea: The one in regard of the distance between Cape Guardafoy and Cape Aden: Peter Goos and the English Pilot making it from 85 to 86 leagues, whereas it is 120: And the other of the latitude of the Arabian coast, near Maculla; the situation whereof is $47'$ more Southerly than those authors have placed it.

These faults are the more inexcusable, as the distance is so short, in the one; and the other so easily determined. I have inserted this discussion in its proper place, as absolutely of great importance in the navigation of this part.

I have not only deduced the longitude of Cape Guardafoy, by merely comparing its distance from different places on the coast of India, as above; but being persuaded that one cannot be too exact in remarks of this consequence, I have also made use of other methods. Indeed I found myself confined within exceeding narrow limits, by the rules I had prescribed myself; first, to determine only by bearings well regulated; secondly, not to admit of long tracks. I had but two determinations of the longitude of Terra del Gada, on the island Madagascar, one attributed to M. Harris, the other to M. Heateot; but the difference was too great to be reconciled, so that I was at a loss which to chuse, 'till by the help of my own observations at the islands of France and Bourbon, whose distance from Madagascar was well known, I at last followed the latter. I saw myself then in a condition of profiting by the journals of the Mocha ships, through the channel of Mosambique, in order to confirm the longitude of Cape Guardafoy; so that by working the traverses of the Amphitrite in 1716, the Royal Philip in 1733, and the Duc de Chartres in 1739, from their departure from St Augustin's bay, in longitude $41^{\circ}30'$, from which it bears, according to the estimation of the first; $N12^{\circ}15'E$. its situation will be in longitude $49^{\circ}37'$; by that of the second $50^{\circ}25'$, and by the last $50^{\circ}25'$; whence it may be concluded to lie in about the longitude of 50° as I have already shewn.

Peter Goos makes the difference of longitude between Goa and Cape Guardafoy $22^{\circ}37'$, instead of $21^{\circ}25'$, as I have already shewn.

If you consult the tables of latitude and longitude at the end of the English Pilot, you will find the difference between Goa and Cape Guardafoy is $12^{\circ}40'$, (*k*) by which Cape Guardafoy will lie in $40^{\circ}45'$ East longitude from the Observatory at Paris. Edward Wright places this cape in $52^{\circ}25'$ from the meridian of London, which agrees exactly with my opinion.

After giving Cape Aden a proper situation from Cape Guardafoy, I have placed the different parts of the Arabian coast according to their respective bearings and distances; and so by continuing that method, Cape Rozalgat is found in longitude $37^{\circ}30'$ from Paris, which confirms the reckonings of the ships from Goa, Bombay and Cape St John, to this cape.

The

(*k*) This must be a mistake, as I there find the longitude of Goa $79^{\circ}50'$, and that of Cape Guardafoy $58^{\circ}10'$ Eastward from the Lizard; so that the difference between them is $21^{\circ}40'$. The error appears to have risen from counterchanging the figures of the degrees.

The chart of the Gulf of Persia, in this collection, is looked upon by the most experienced navigators to be the most correct and exact of any yet published.

That part of my general chart, which contains the coast of Persia, from Cape Jasques to the Gulf of Guzurat, inclusive, I took from the English charts, judging that their trade to the river Sinde should make them better acquainted with these parts than any other nation.

The construction of my other general chart is founded upon better principles, because, in fixing the chief places, I was assisted by the astronomical observations at Pondicherry, Malacca, Siam, P^o. Condore, and Canton, which is all disposed in such a manner that there is no fear of falling into any considerable error in fixing the situation of places near them. I shall just mention the most considerable; the method I have made use of to determine them, and their difference from former charts.

Having regulated the coast of Coromandel, Golconda, &c. agreeable to the longitude of Pondicherry, I thought it best to determine the East coast of the Gulf of Bengal by that of Malacca, which lies, according to the astronomical observations of P. Beze and Comille, in latitude $2^{\circ} 12' N.$ and $99^{\circ} 45' E.$ from the Royal Observatory at Paris.

The coast of Malayo, Queda, Tenasserim, and Pegu, are drawn from several correct plans of those parts. I have inserted in the directions particular remarks on the coasts and islands to seaward. There is nothing now remains, with regard to the Gulf of Bengal, but the determination of the NW. part of the Island Sumatra, on which depend those of the Nicobars, and other adjacent islands. This is of so much the more importance, as these places are generally made by ships passing and repassing the Straits of Malacca.

It is by the calculation of a series of triangles made by the bearings and differences in lat. of several remarkable objects, lying between Malacca and Acheen, that I have concluded the long. of the latter to be $93^{\circ} 14' E.$ from Paris, and its latitude according to the observations made there; $5^{\circ} 24' N.$ The correctness of this position may be depended on, if it be considered that the several objects above mentioned are so situated as to be seen at the same time, or to have them bearing in one (*l*).

The error of Peter Goos, in his position of Goa, must necessarily extend to all parts of India, supposing their respective distances were exact. We will now examine the different situation of some particulars. The longitude of Pondicherry and that part of the coast, he makes $102^{\circ} 10' E.$ from Teneriff, equal to $84^{\circ} 10'$ from Paris (*m*), differing only $6^{\circ} 10'$ instead of $7^{\circ} 30'$, from Goa (*n*), whereby the difference of the meridians of these two cities, whereon the breadth of Indostan depends, is $1^{\circ} 20'$ less than it should be. Malacca is placed in the same chart in longitude $122^{\circ} 30' (o)$; the difference is $4^{\circ} 45'$ instead of $6^{\circ} 10'$, which it would have been, if the difference of meridians between Pondicherry and Malacca had been conformable to the difference by the observations (*p*); so that Peter Goos has made the meridian distance between these two places $31 \frac{2}{3}$ leagues, or $1^{\circ} 35' (q)$ less than it should be. This error affects particularly the breadth of the Gulf of Bengal, between Acheen and Pondicherry, which the same author has made $13^{\circ} 53'$ instead of $15^{\circ} 14'$, as I make it by working the bearings and distances of Acheen from Malacca. The plain chart in the English Pilot is still less exact: However, I shall not enter into a discussion of it here, as by so doing I should be rather tedious; but hasten to explain the construction of my own. The Dutch having settlements on the West coast of Sumatra, has engaged them to make new charts thereof, from which mine are constructed. I have also constructed an entire new one for Java Island from the Dutch, rectifying the

(*l*) Though the several bearings may be hereby pretty exactly determined, especially with a knight's compass, yet for want of the true distances, in a series of triangles, the error in both latitude and longitude will be considerable, in proportion to their number, as is evidently the case here, with regard to the latitude of the island encompassing Acheen. See p. 65.

(*m*) The longitude of Pondicherry, by celestial observation, as in p. 34, is $78^{\circ} E.$ from Paris. (*n*) As was shewed before in p. x. (*o*) From Teneriff, which by subtracting 1° for the difference of longitude between Teneriff and Paris, makes it $104^{\circ} 30' E.$ à Paris: The longitude of Malacca, by celestial observation, as in p. 69, is $9^{\circ} 45' E.$ à Paris.

(*p*) Or rather if it had been conformable to the former difference between the longitudes of Pondicherry, as above.

(*q*) This should be only $23 \frac{1}{3}$ leagues, or $1^{\circ} 25'$, as is evident by subtracting $4^{\circ} 45'$ from $6^{\circ} 10'$.

the latitude and bearings of several places on the South coast, according to the observations, &c. of several able navigators; only the exact longitude of some place is wanting, whereby to regulate that of others respectively. An observation made at Batavia would have been of great service; but though this city is the most considerable of the European settlements in this part of the Southern hemisphere, its longitude has not yet been exactly found; that of $98^{\circ} 30'$, inserted in the Ephemerides of M. Desplaces cannot be right, nor is it adopted by any modern geographer: To determine its situation then, it will be necessary to have recourse to such experiments as I made use of for the position of Acheen, making Malacca the standard.

In order to render this position the more exact, I found it necessary to have recourse to my former method, for determining the longitude of Acheen: These gave me the true situation of the intervening places, the errors thereof in former charts, and the means of correcting them. For this purpose I attentively compared the several charts of the Eastern part of the Straits of Malacca, with the memoirs, instructions, and journals relating thereto. The instructions in the English Pilot seem tolerably good in some places; but their incorrectness upon the whole will soon be discovered on examining whether the places situated between them, (Malacca and Batavia) are placed according to their true bearings and distance, and whether the account contained therein be natural: The chart is yet more erroneous in respect to the islands lying to the Northward of the Straits of Banca: Most of the journals of voyages to China take notice thereof, and experience hath made it clear to me; so that this chart is not at all preferable to a number of other manuscripts, which raise one's indignation, on account of the carelessness and ignorance of copyists. If, notwithstanding the pains I have taken to correct the errors of former hydrographers, some few have escaped me in what I here publish, it is either because I have not been informed thereof, or else I have been obliged, with regard to places but seldom frequented, to follow such memoirs as I had by me.

When I saw the errors of former charts of the Straits of Banca, I resolved to make a new one, in which I hope I have succeeded as well as could be expected for one not employed on purpose, and having so few tolerable plans to assist me. You will find, in my instructions, many useful remarks for those straits, and the sea between it and the coast of Java; and having regulated the situation of several places, I at length found Batavia to lie $4^{\circ} 37'$ East from Malacca, which makes it $104^{\circ} 22'$ East longitude from Paris.

The Straits of Sunda, as most charts describe it, need several corrections of the bearings and distances: I have refuted two of the principal errors of the English Pilot, in my Instructions for sailing to China, page 109. Those who sail through these straits will readily notice them, as also some others which I have rectified in my chart.

The position of the West end of Java (which is made by most ships bound through the Straits of Sunda) being hereby regulated, it determines the longitude with more certainty, which, with reference to Batavia, lies in $102^{\circ} 22'$: This is placed by Peter Goos in $124^{\circ} 50'$ from Teneriff, which makes it $106^{\circ} 50'$ from Paris: The difference is $4^{\circ} 28'$, being nearly the same as at Malacca, as above, so that their difference of meridians in that chart nearly agrees with my remarks.

Batavia served me to fix the longitude of all the islands Eastward of Java, as far as New-Holland: The Islands of Borneo, Celebes, and the Moluccas, are also adjusted by it. With regard to their position otherways, I have mostly followed the Dutch charts, who are entirely possessed of the trade of these parts; though I have also consulted Dampier.

I shall now return to the Northern Hemisphere.

The situation of Juthia, capital of the kingdom of Siam, in latitude $14^{\circ} 18'$ North, and $98^{\circ} 30'$ East longitude from Paris, having been regulated by so many corresponding observations, there remains no doubt of its exactness: I therefore consider it as a principal standard in my chart; and by it the gulf of Siam, and the Islands Timoan and Condore, at the extremes of the mouth thereof, are adjusted. The first is placed, according to its latitude and bearings with Point Romanio, at the East end of the Straits of Malacca; the second, by the astronomical observations of P. Gaubil, in latitude $8^{\circ} 40'$ N. and longitude 105° E. from Paris (s).

The

(s) With respect to the correctness of this longitude, see p. 84. and Mr Nicholson's Rem. p. 80.

The places thus fixed, the Western coast of the gulf is adjusted by P°. Timoan and Juthia ; the Eastern is by Juthia and P°. Condore.

The Gulf of Tonquin is really so little frequented by Europeans, that I could meet with nothing better on the subject than the ancient charts, and some remarks made whilst that navigation subsisted.

As to the Island Hai-Nan, and the coast of China, to the Macao Islands, included, I have followed M. D'Anville, according to the descriptions of the Jesuits ; being of opinion that these fathers, who were employed by the emperor of China to make maps of the different provinces, must be supposed thereby to have had a better opportunity of describing the coasts than navigators. I have only added a few islands and dangers, which are mentioned in my Instructions.

The situation of Canton, (r) which is as well confirmed as that of Juthia, is the furthest in my chart, determined by astronomical observations ; so that Macao and the adjacent islands are well regulated thereby. Before I proceed, I shall examine the former charts, after having reduced the longitude to the meridian of the Royal Observatory at Paris.

That of Peter Goos placing Siam or Juthia in longitude $104^{\circ} 50'$, differs $6^{\circ} 20'$ from the observations, which is $1^{\circ} 35'$, more than the difference of Malacca : It is less with regard to P°. Condore, the same author making its longitude but $4^{\circ} 55'$ more than mine. In placing Canton in $134^{\circ} 43'$, or $116^{\circ} 4'$, from Paris, it differs just 6° from its true position. Hence it follows, from the two last comparisons, that the Dutch Charts have placed Canton $1^{\circ} 2'$ further to the Eastward of P°. Condore than it really is : It is to this, and not to the currents, that navigators ought to attribute the difference they have experienced in their departure from P°. Condore to Macao, for although most make use of manuscript charts, (very necessary for navigating in these seas) they mostly have this error, and although there have been the helps of astronomical observations for some time, yet the authors of them had rather copy the defect than correct it. The errors of the English Pilot are still greater, placing Canton $7^{\circ} 30'$ Eastward of P°. Condore, which is $1^{\circ} 47'$ too much (u). This comparison of my charts with the former ones, is sufficient to prove them better adapted to the use of navigation. The coast of China, from Macao to Amoy, including Formosa, is taken from a manuscript chart, which I followed in this part agreeing with the courses and remarks of those who have frequented this coast.

The Philippine Islands are more particular in my chart than any of the former ones, which owing to the survey of these Islands, made by command of the viceroy of Manilla, and engraved there in the year 1734. As to the situation I have given that city, in latitude $14^{\circ} 30'$ North, and longitude 118° , which agrees with that inserted in the *Connoissance des Temps*, the reader will find the reasons in my Directory, page 121, which I judge sufficient ; therefore shall only observe, that the reciprocal situation of the SW. point of the Island Paragoa, and that of the North point of Borneo, cannot be right in the other charts, unless you allow the former a greater length and different bearings ; but there must be new surveys made before that can be corrected. I did not choose to follow some manuscript drafts, which thus determine their situation, knowing how many errors they are liable to : I shall just mention by the bye, that the bad construction of most of these contribute to their imperfection, and are often of dangerous consequence. Most navigators, persuading themselves that the charts of a large scale are preferable to others, especially for coasting, make no scruple of enlarging the very small ones ; by which practice several dangers are omitted in such large ones ; because, as they would be confused or imperceptible, they were omitted in the small ones, and by this omission ships are exposed to dangers, so much the more to be feared as they are unknown (w). These sort of charts are so multiplied, that it requires a particular study to distinguish the copies from the originals. I here end this preface, which describes a work composed for the good of my country, and to be useful to a Company whom I have served upwards of 25 years : happy at the same time to merit the approbation of one of the most celebrated Academies in Europe.

(r) In $116^{\circ} 43'$ E. long. à Paris.

(u) See the notes in p. 121.

(w) That is to say, dangers being omitted in charts of a large scale, whereby they might be easily represented without confusion, causes the navigator to conclude there are none, and thereby puts him off his guard.

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A NEW
DIRECTORY
FOR THE
EAST-INDIES.

Of the AFRICAN COAST, from the EQUINOCTIAL to the STRAITS
of BABEL-MANDEL.



FROM the river Dos Fugos, situate under the equinoctial-line, to Cape Basses, River dos Fugos. the coast inclines to NEbE. and not NEbN. as described in the chart of Peter Goos. The islands of Brava are situate under 1° of North latitude, to the NE. of Islands of Brava. a cape, that projects a little from the land. The Northernmost of these islands has, at the NE. point, a sandy bay. The SW. point is higher than the rest of the island, which may be of about $1\frac{1}{2}$ league extent, NE. and SW. The soil of these islands is dry and barren, as is the whole coast: There is no other particular mark for this coast; which may be seen 8 or 9 leagues at sea. It is unknown what soundings are off it; the memoirs we have of this part making no mention of any.

The latitude of Cape Basses is $4^{\circ} 45'$ North: It is so called from a reef that surrounds it, and projects about $\frac{1}{2}$ a league. This cape is only known by the different form of the coast, which Cape Basses. from NEbE. stretches to the NNE. (a) as far as $9^{\circ} 50'$. This coast is of a middling height, and may be seen 9 or 10 leagues off. Its soil is sandy, dry and barren: There is nothing farther remarkable. In coasting this part are seen several bights or bays, concerning which we have no account. There are soundings in 20 or 30 fathoms 3 or 4 leagues off shore. It is best to sail along this coast in the day time, it being unsafe to approach it at night; on the contrary it is necessary to steer a quarter of a point wide of it.

In $9^{\circ} 50'$ is situate Cape del Gada (b), 4 leagues to the Southward of which is another point; Cape del Gada. the land which lies between these two may be perceived 12 leagues. It is very even at top, steep, and has white spots along the sea side. The chief mark to distinguish the cape, in coming from the Southward, is, that the coast seems to disappear, and forms a large bight or bay, to enter

G

(a) As appears by the journals of the ships, le Royal Philippe, l'Union, and le Mer. (b) On board the Severn, I made the lat. of Del Gada $10^{\circ} 7' N.$ with Hadley's quadrant; and its M. dist. à Comaro $7^{\circ} 13' E.$ The coast hereabouts is variously laid down and named in different charts.

enter which, care must be used, not only because it is unknown, but on account of the S. Easterly winds, which render it very difficult to sail out again. The bottom of the bay cannot be seen, *in passing by.*

Cape
Dorfui.

Being off Cape del Gada 3 or 4 leagues, Cape Dorfui may be seen bearing NbE(c). Coming from the Southward, it appears like an island, sloped to seaward; to the Westward of this is a mountain like a barn, which is joined thereto by low ground, and is the reason that at a distance they appear separated. The land to the Northward of Cape Dorfui cannot be perceived, 'till the cape bears NNW. This cape is very high and steep; its latitude is $10^{\circ} 25' N$ (d).

Cape Gar-
dafui.

From Cape Dorfui to that of Gardafui the course is North, distance 26 or 27 leagues (e). Between the two, and close within Cape Dorfui, is a great bight; thence the coast runs NNE. as far as Cape Gardafui. These lands are very high, and the beach very steep, whitish and rugged at the top: they appear so to within $\frac{1}{2}$ a league to the Southward of Cape Gardafui; whence this extremity, as it descends, seems to form several steps. The cape itself is low land; yet almost steep to. Its latitude, on comparing many observations, is found to be about $11^{\circ} 45'$. This coast is very bold, having no soundings a mile from the shore.

Cape, or
Mount
Felix.

From Cape Gardafui to Cape *Felix*, or Mount Felix, the course is WbN. Northerly, distance 14 or 15 leagues. The coast continues high and steep for 8 or 9 leagues; the rest as far as Mount Felix is a barren plain, and uneven along the sea side; but within land are high mountains. This coast is safe, and without danger: Nevertheless, if it be night, steer a little wide of the two capes, on account of a point of land, that jets out between them (f).

Mount Felix is a high and steep cliff upon a low land, which occasions it to be taken for an island, in coming from the Eastward. In fine weather it may be seen 15 or 16 leagues (g).

Cape St
Peter.

Having passed Mount Felix, you may see the low land continue along the sea side, for about 5 leagues, and incline to the S. Westward. Thence the land is very high for 5 or 6 leagues, and terminates in a plain of a middling height, which lies WbS. about 2 leagues. From the West end of this plain to Cape St Peter, is reckoned 6 leagues. This last coast is high, and bordered with rugged mountains. The extremity of this chain of mountains is what is called Cape St Peter. About two leagues from this cape, is seen by the sea side a white spot, looking like a small sandy bay. Mount Felix and Cape St Peter lie ENE. and WSW. distance 16 or 17 leagues.

Island
Mette.

From St Peter's Cape to the Island Mette, the course is WbS. about 21 leagues; the coast between them forms a bight, where the shore is of a middling height and very uneven. But within land are high mountains.

About 3 leagues to the Eastward of the Island Mette, is a Peninsula of middling height, covered with hillocks, which appear separate. Between this Peninsula and the Island there is a bight, the sea coast of which is not high; but within land is a chain of lofty mountains. The Island Mette, next this Peninsula, is of a middling height; and is covered with hillocks, the highest of which, in the middle of the Island, resembles at the top the form of a Hat (b). The inland part of this Island, and of the whole coast, is extremely dry and barren.

Burnt, or
White
Island.

From the Island Mette to White Island, the course is nearly West 18 or 19 leagues. The main land between the two is moderately high. This Island is no more than a very high rock, which may be seen 10 leagues. The dung of the birds, which cover it, makes it look white. Some navigators call it Burnt Island (i). It is about 3 leagues from the continent. When it bears SW. it appears very round and encompassed with other little rocks; but when it bears South, it seems to extend $\frac{1}{4}$ of a league E. and W.

From Burnt Island the coast continues to the Westward; and very mountainous within land. But as this coast is seldom frequented, no better account can be given of it. For the ships generally leave the Ethiopian coast, when they are got as far as Burnt Island and stretch over to that of Arabia.

Of

(c) NEbE. rather; for we saw Cape Gada, at noon, NNW. 4 or 5 leagues, and steered NNE. by compass, 9 miles: when, at $\frac{1}{2}$ past 1, P. M. saw land NE. about $3\frac{1}{2}$ leagues (d) I made its latitude but $10^{\circ} 20' N$. and make Cape Dorfui the Eastermost land of all Africa.

(e) I made it N. $21^{\circ} W$. 91 miles, allowing for a current, we found set to the Northward, 1 knot per hour. (f) The variation here was $10\frac{1}{2}$ deg. Westerly in 1746. (g) By several accurate observations, I made the latitude of Mount Felix, $11^{\circ} 53' N$. (b) Or rather a Dutchman's cap. (i) Called by the English, Bird Island.

Of Cape A D E N.

MOST charts differ as to the bearings of Cape Aden from Burnt Island. According to Peter Goos it is NNW. In the English charts NbW. But neither one nor the other is exactly right. In these two charts I have corrected a mistake which has hitherto misled several navigators. For this purpose, I have collected the different opinions of the most experienced navigators of this gulf; and having impartially examined the journals of several ships (*k*), determined the bearing to be N 48° W. (*l*) Accordingly Cape Aden is found to be 27 leagues more Westerly (in respect of Burnt Island) than in the charts of Peter Goos (*m*), and 35 leagues more than the English.

Cape Aden.

A difference so considerable hath not escaped the notice of navigators. Their journals mention it. Nevertheless the greatest part could not imagine, that the authors of those charts had committed so great an error, in such a small distance. They ascribed it to the currents; but it is easy to demonstrate their mistake. For let it be observed, that all the ships, that have made this track, have found very nearly the same difference. And this conformity could not be owing to the cause above supposed; for it must be granted, that a current has not only the same direction, throughout the same season; but also its deviation from the course must be in proportion to the space of time, that the ships take in crossing from Burnt Island to Cape Aden.

Again, the winds that blow in the Arabian gulf are easterly from November to June: On the contrary, they blow from the Westward the other six months, and accordingly determine the direction of the currents. This is a general rule, except in some particular cases, as a month before or after the breaking up of the monsoons, and the new and full moons, when they sometimes take a contrary course. Hence it may be easily judged improper to ascribe to the currents a difference which is always the same in the same season, whether crossing from Burnt Island to Cape Aden, or sailing directly from Cape Gardafui, or the Island Soccotora. Those who are best versed in this navigation, have looked upon this difference as an error in the charts, and have corrected it in their particular draughts, to which I have conformed. I shall now return to the description of the coast, from which this important digression took me off.

Cape Aden, in coming from the Westward, looks like a high island, scragged at the top; and upon a nearer approach, resembles two islands. The low land of the bay, which lies to the Northward, and can only be seen upon a near view, occasions this appearance. When this cape bears E. it appears like a very rugged mountain, its Southern extremity lower than the Northern. To the NW. of this cape there is a mountain about the same height, equally rugged, high on the E. side, and low on the NW. and between the two are little hills resembling rocks, which being on low land, imperceptible at the distance of 8 or 9 leagues, appear separate.

From Cape Aden to the low point of Cape St Anthony, the course is WbS. 19 leagues; the land between the two is low to sea-ward, with here and there some downs of sand, 'till within about 5 leagues of this point, where it rises; being formed by a high mountain, which winds a little to the Westward, and then stretches away in-land. This ridge (before you raise the low land) makes the cape appear high, coming from the Southward.

Cape St Anthony.

If, by contrary winds, you are obliged to turn it along this coast, come no nearer than 13, nor sail above 30 fathoms (*n*) from it, that you may anchor in case of a calm. Otherwise you may be exposed to the violence of the Tide, which sometimes runs very strong, and be thereby driven upon the Abyssine coast, toward the gulph of Zela, where you will be in danger of being lost.

There

(*k*) The ships before quoted.

(*l*) In the Severn, I made the course from Bird Island to Cape Aden, N. 64° V. distance 180 miles, and M. distance, $2^{\circ} 42'$ W. But this was late in the season, (a 1st to 6th of July) when the current sets strong out of the Straits. And coming back again (a 4th, to 18th of Sept.) made $5^{\circ} 45'$ E. between the same places; which plainly proves there is a great difference made by the currents; being only 5 days one way, and 14 the other. (*m*) Mons. D'Après must certainly be mistaken in these distances. If he had given the distances, or latitudes, as well as the courses, we might the readier have found out where the mistake lay. He makes the course between them, N. 48° W. Now I have observed the latitude of Bird Island to be $11^{\circ} 22'$, and that of Aden $2^{\circ} 40'$; so that the difference of latitude being 78, the distance will be found 116 miles, and the departure only 85; not quite 29 leagues; therefore the difference of meridians cannot be so great, as 27 and 35 leagues; so that I imagine he rather means this of the distance than departure.

(*n*) Sand and coral rocks.

There is a small shoal off the low point of Cape St Anthony, but it doth not run far out: So, by keeping in the above depth, there is nothing to fear.

Cape Babel-Mandel.

From the low point of Cape St Anthony to Cape Babel-Mandel, the course is WbN. Northerly 15 or 16 leagues; between them the land is low along shore, forming a deep bay, which makes the cape appear separate; and the ridge of mountains above-mentioned extends to the NW., till about 5 or 6 leagues from Cape Babel-Mandel, which terminates of a moderate height (o), rising gradually from North to South, the peaked part to the Northward, and blunted again a little more Northerly.

In foggy weather, or otherwise, care must be taken to avoid entering this bay, as several ships have been lost there, thinking to sail into the Straits, and mistaking (for want of experience) Cape Babel-Mandel for the island of the same name. Nevertheless it is easy to avoid this mistake; this cape making as above described, and the island low and smooth; the two extremities of which descend alike from the middle (p).

Straits of Babel-Mandel.

Between the island and the cape is the Little Straits, so called to distinguish it from that to the Southward. This Strait is 4 miles broad. There is no danger, observing to keep rather nearer the island than the cape; in irregular soundings, from 20 to 10, 14 and 9 fathoms, coarse sand, and now and then 7 fathoms, upon a small bank, but no danger.

Having passed this Straits, if there is not time enough to get to Mocha by day-light, it is better to anchor, than run the hazard of overshooting it. In this case you must shut up the Straits, and anchor a little to the Northward of Cape Babel-Mandel, where the water is always very smooth: Whereas if you anchor with the mouth of the Straits open, you stand a chance of losing your cables and anchors, as many ships have done.

Either entering, or coming out of the Red-sea, it is better to pass through this Straits than that to the Southward of Babel-Mandel island; because, in a calm, you are *there* exposed to the currents; and no anchoring ground, but very near the island.

Mocha road.

From the entrance of the Straits of Babel-Mandel, to Mocha road, the course is NNW. 13 or 14 leagues. The land is low along the sea-side, but within land are high mountains. Keep about $1\frac{1}{2}$ or 2 leagues off shore, in 9, 10 and 12 fathoms water. On the beach you may perceive a little sand-hill; it is somewhat nearer to Mocha than Cape Babel-Mandel. The approach to this town is known by the date-trees, which extend, about 2 leagues to the Southward, along the sea-side. These are the only trees to be seen along this coast, which is very barren. When you are hereabouts, come no nearer than 13 fathoms, in order to avoid a bank, that encompasses the road on the South side, on which there are but 2 fathoms. This bank is so much the more dangerous, as it is steep too; for, from 10 fathoms, you suddenly have 3 or 2. Then keep in this depth till you bring the spire of the great mosque to bear SSE. when you may haul in for the road, and anchor in what depth you think proper (q).

Of the Coasts of ARABIA, PERSIA and GUZURAT.

THE error that I remarked in the distance between Cape Gardafui (r) and Cape Aden, is not the only one that occurs in the old charts of these parts; another more material there is, which ought to be set to rights. I say more material, because it is in the latitude, which is the only point in which the navigator thinks he may safely rely. This article requires a particular enquiry.

(o) Like a gunner's quoin. namely, the North fort SEbE.

(p) Like the Island Penguin at the cape. The South fort SbE. The great mosque ESE.

(q) You have a good birth, with the following bearings, off shore 3 or 4 miles. (r) Burnt Island, rather.

In Thornton's English charts, the coast of Arabia runs, from Cape Aden, to the NE. as far as Maculla, which accordingly is placed in $14^{\circ} 50'$ North latitude. The particular chart in the English Pilot, and the directions annexed, make it $14^{\circ} 46'$. So that I flattered myself, in following authorities so alike, this part would have been exact. But upon examining the journals of several navigators, I was surprized to find, that in passing from Soccatra Island to Cape Aden, with an endeavour of keeping in the latitude of that cape, they had seen the land near Maculla, from which they must have been more than 30 leagues distance, according to the English charts.

Most of them have accounted for this appearance, and from the uncertainty of their latitude, concluded that the currents drove them Northward. For my part, being on my guard against these sort of phenomena, which often serve to justify the defects in charts, and the errors in navigation, I imagined there were other more positive observations necessary to the correction; and I was lucky enough to find some.

M. Desjardins, master attendant of Pondicherry, a very experienced navigator, who sailed 4 years in the Eastern seas, communicated to me two remarks on this subject, which confirmed my conjectures.

In two successive voyages that he made, steering from Cape Aden, he saw the land to the Northward distinct enough to judge the distance. His care each time in observing the latitude, sufficiently convinced him that the currents had not carried him to the Northward. There remained then only to prove the distance of Cape Aden: after all the necessary care he took to this effect, he remained satisfied that this land was the coast about Maculla, which of course ought to be 7' more Southerly than it is placed in the English chart and directory.

The same navigator (who omits nothing that tends to perfect Hydrography) shewed me also a plan of Curia Muria and the adjacent islands, where he was obliged to turn it.

To this plan I conformed myself. He assured me that nevertheless the latitude of Cape Moribat, according to the English pilot, was correct. This second observation proves that the alteration ought to be made in the shape of the coast between Maculla (s) and this last place. I have here adjusted the bearings resulting from each place in particular, with a description of the coast, as far as Moribat.

It is necessary to inform navigators, that from the beginning of April to the end of August, Winds & currents. the winds blow upon this coast from SW. to SSW. varying to the West, in hard squalls, and sometimes accompanied with rains: for which reason, during this part of the year, working windward along this coast is impracticable; for there is no port to shelter you from the storms; and, in many places, no soundings further than two leagues off shore (t). In September the winds blow a little fresh from the East, with strong currents to the Westward, and continue so to the end of March, with frequent land and sea breezes, which blow very faint from the Westward, but very fresh from the Eastward. Hence it is that the ships, that sail from Mocha towards the end of August, or later, bound to the Eastward, should avoid this coast, and keep more Southerly, in order to take the advantage of the WSW. winds, that blow there till the middle of September. Many ships have lost their passage for want of attention to this observation.

The bay of Maculla (u) is about 3 leagues deep and 6 wide. The land is very high. On the Bay of Maculla. NE. point is one mountain, somewhat higher than the rest, under which is the road, which serves for shelter from the winds blowing from the ENE. to the NW. (x) Here is safe anchorage, a cable's length from a little rocky point, where all the danger is in sight. NW. 3 cables length from this point, there lies a reef of rocks under water, upon which the sea sometimes breaks. The marks for anchoring here are the Eastern point of the bay SE. one league, and the Westernmost point SW. in $3\frac{1}{2}$ fathoms.

For

(s) If Maculla is to be placed in the charts 47' more Southerly than heretofore, and Aden and Moribat to remain as before, it must alter the shape of the coast, as well to the Westward as the Eastward. (t) But though it may be impracticable to gain a passage, after the SW. winds are set in, by keeping on the Arabian coast; or even out in the middle of the Straits, where the currents then set strong to the Eastward: yet it may be obtained by keeping the African shore on board, as much as possible, till past the meridian of Aden; and then stretching over for the coast of Arabia. (u) The English Pilot's direction corrected from the mistake above-mentioned. (x) The English Pilot mentions it as a road against Easterly, Northerly and NW. winds.

For the rest of the bay, you may anchor in 15 or 16 fathoms, at one league off shore. In the bottom of this bay is the little town of Foa; and, on the point, some fishermen's huts. Filth here are plenty and good; but water and other provisions are scarce, and very dear.

Point of
Shahar.

From Maculla bay to the point of Shahar the course is ENE. 12 or 13 leagues. There are many villages seen along this coast, whose inhabitants are not very sociable. From the Eastern point of Maculla, you may coast it in 9 fathoms, or nearer on occasion.

Shahar appears a fine town, situate by the sea-side, and may be seen 5 or 6 leagues at sea, resembling several white cliffs: It is known by two hills, one to the Northward and the other to the Southward. The inhabitants are civilized (y), and have a king who gives a kind reception to strangers. The marks for anchoring are the Northernmost hill NEbN. and the Westernmost hill, West by the compass; (z) in 9 fathoms, sand and oaze.

Cape
Boccouas-
Hova, or
Bogath-
sua.

From Shahar to Cape Boccouas-Hova, or *Bogathsua*, the course is East 15 or 16 leagues; a clear bottom without any danger. The coast is pretty high. There is from 50 to 60 fathoms, 2 leagues off shore. One league from the cape there is but 12 fathoms; and, as you approach, it shoals gradually.

Kissen,
or Kaifun
Point.

From Cape Boccouas-Hova to Kissen-point, the course is ENE $\frac{1}{4}$ N. 31 or 32 leagues. The inland part between them is high, and may be seen at least 10 leagues; but the coast is low. Here are seen many villages. All this coast is very safe, having from 30 to 40 fathoms, 1 $\frac{1}{2}$ or 2 leagues off shore. Kissen point is high land, which may be seen 10 leagues at sea, and is remarkable by two peaks, that make like asses ears, when they bear EbN. and ENE. and when they bear NbW. you may see the two little towns of Kissen and Durja. Their roads are to the NW. in what depth you think proper.

Cape
Fortuack.

From Kissen-point to Cape Fortuack, the course is NEbE $\frac{1}{4}$ E. 21 or 22 leagues. The coast between them is low to seaward, and high within land: there are seen some villages. The soundings here run farther out, for 2 leagues off you find 37 fathoms, which shoals gradually failing nearer shore. But at Cape Fortuack, there are 40 or 50 fathoms within half a league. This cape is very high, and may be seen 20 leagues at sea: To the Northward of it, the coast forms a large bay, which hath good soundings, and holding ground. There is no great depth to be found but about the cape. You may anchor, in this bay, in what depth you will; but when you have passed it, you meet (as in many other parts of the coast of Arabia, where the shore is high and steep) with no convenient depth for anchoring.

Doffar.

From Cape Fortuack to Doffar, the course is NEbE $\frac{1}{2}$ E. Opinions differ about the distance: The English Pilot makes it but 48 leagues, others 54. Those who make this track ought to take notice of this difference. Three or four leagues before you come to it, you perceive high champain land. Doffar is a little town surrounded with trees; its road is quite straight. They anchor a mile off shore, in 5 or 6 fathoms, the highest house in the town ENE. Here is the best ground in the road.

Moribat.

It is reckoned 8 leagues from Doffar to Moribat, where most ships abide, that lose their passage. It is said, that this road is exceeding good, during the Easterly monsoons; however, this I cannot positively affirm.

The tides are very irregular along this coast; they rise at certain times 7 or 8 feet: The currents commonly set with the wind, except at the new and full moons, when they run for 3 or 4 days very strong to windward; and this change is of great service to those who lose their passage.

Many navigators, who are not acquainted with this accidental difference of the winds and currents, are fearful of sailing near the shore: However, this must and may be done without danger; for the winds seldom blow strong, *on the shore*, during the Easterly monsoons.

There are many places upon this coast where the inhabitants are not to be trusted, as at Shahar, Kissen, and above all at Doffar, where the Christians are not at all beloved (a).

Of

(y) That is to say, they can behave well for their own interest, and with good looking after. See the last paragraph of this chapter.

(z) The variation, according to the English Pilot, was 14 or 15 deg. in the year 1709, and in 1746, about 11 deg.

(a) And consequently are not real friends, whatever they may pretend.

Of the Island SOCCATRA.

THE body of the Island Soccatra (b) is in $12^{\circ} 25' N.$ The Easternmost point is 59 leagues distance from Cape Gardafui. It is about 25 or 26 leagues from East to West, and 10 from North to South: The land is mountainous. When the Easternmost point of high land bears either N. or S. it makes not unlike a Dolphin's nose; and from thence the land trenches away to the Eastward, for about 3 miles, till it terminates in a low point, from which a ledge of rocks, even with the water, runs out to the S. Eastward, about a league; and lies in about the latitude of $12^{\circ} 40' N.$ There are two anchoring places: That for the Easterly monsoon is at the WSW. part of the island, opposite one of its coasts, which extends about 10 leagues SE. and NW. To sail to this anchorage, if to the Eastward of the island, coast along shore in 20 fathoms, as far as the WSW. point of the island, which is high and bluff: by keeping that depth, the bottom is sandy, but in 15 fathoms there are rocks; so that there is no anchoring there, in case of a calm, without the hazard of losing your anchor. Having passed this high point, keep in from 15 to 25 fathoms; and when you are opposite a high round hill, in the middle of this part of the coast, near which there is another smaller, split in the middle, and that this last bears North, you may anchor in 18 fathoms, sandy ground. Here refreshments may be had, but the water is a little unpalatable: There is better to be had in some places thereabouts, but with great difficulty. The bay of Tamrida, on the North side, where the viceroy resides, is the most convenient place in the island for refreshments, and plenty of provisions; but the anchorage here is not good, being too near shore. This place is known by a point of sand, which makes the Eastern side of the bay. After you have doubled it, you may perceive the town, opposite which you may anchor, half a league from the shore, in 10 fathoms, sand and coral. The water is very good, and provisions cheap (c). On the North coast, coming from the Eastward, as you sail towards Tamrida bay, you may observe 2 white sand hills, the Westernmost of which is much the largest: The town lies about 4 miles to the Westward thereof, under the highest and scraggiest part of the land. You may anchor about 2 miles off shore, in 9 or 10 fathoms, the town bearing S. or S.W.

Coast of ARABIA from CURIA MURIA to Cape ROSULGAT.

THE bearing of the coast of Arabia, from the bay of Curia Muria to Cape Rosulgat, is NEbN. distance 115 leagues: It is full of rocks and dangers, which are but little known: Besides it is not safe to approach it, because of the currents all along, which may set you on it, should you be taken in a calm: Nevertheless the ships bound for Persia, which commonly make Cape Rosulgat, should not keep more than 15 or 16 leagues to the Southward of this cape. Along this coast there are soundings, about 3 leagues off shore.

Cape Rosulgat is the Easternmost point of the coast of Arabia: Its latitude, according to several observations made at sea, is $22^{\circ} 12' N.$ As for the longitude, I conclude, according to what I said in the preface, to fix it at $57^{\circ} 30'$ East from the Royal Observatory at Paris (d). Its extremity is low, but within land are exceeding high mountains, seen 20 leagues off at sea.

From Cape Rosulgat to Mascatta (e), the coast stretches to the NW. 26 or 27 leagues. Between the two are seen some sandy bays; but so shoal, that there is no anchorage, except at Teywee (f) and Curiat, and there it is within pistol-shot of the shore: Nevertheless you must keep this shore on board, in the months of April, May and June, if you would arrive at Muskat, or enter the Persian gulf. Muskat is in the latitude of $23^{\circ} 25' N.$ The town is encompassed with a good wall, and the port big enough to contain 50 or 60 sail of ships. There are no soundings a mile off shore.

The

(b) Portuguese Directory. It must be, at least, in $12^{\circ} 45' N.$ for capt. W. Larkins, when in the Boscawen, 1750, observed, in latitude $12^{\circ} 25' N.$ when the island bore à NNW $\frac{1}{2}$ W. to NbW. off shore, about 5 leagues, and allows it, at his departure, in $12^{\circ} 41' N.$

(c) The journal of the ship Maurepas. (d) The longitude of London, has been usually accounted $2^{\circ} 25' W.$ from the Royal Observatory at Paris: but by a late observation made there, by the Abbé de la Caille, it is found to be only $2^{\circ} 10'$ from Greenwich, or $^{\circ} 15'$ from London: Whereby all the longitudes, mentioned in this book, may be adjusted to the meridian of London.

(f) Or Tegwell.

(e) Or Muskat.

The rest of the coast, from Muskat to Cape Mozandon, (g) is bordered with islands and several dangers, of which I can give no particular account; any more than of the navigation of the gulf of Persia; as for this purpose I must have memoirs more particular than any that have yet come to hand.

Of the Coast of PERSIA.

Cape Jasques, or James.

THE course, from Muskat to Cape Jasques (b), is NNW. distance about 54 leagues. The Easternmost point of this cape, which forms the entrance of the Persian Gulf, is, according to the generality of navigators, in $25^{\circ} 50'$ North. This point is very low, and upon it there is a white square cliff, like a monument, standing in the sea; but cannot be seen, when you are in the road. In Jasques Road, the bottom is sand; except very near the shore, or at the Eastern point. To the Northward of this point, there is a little river; where vessels of about 10 feet draught may ride very secure. Within this river you have $4\frac{1}{2}$ fathoms, at low water; when on the bar there are but 5 feet, which increases with the flood to 7 or 8 feet.

Cape Guadel, or Goadel.

Cape Guadel is of a moderate height, lying in the latitude of $25^{\circ} 15'$ N. (i) and bearing (according to the English Pilot) from Cape Jasques EbS (k). The distance, *per medium* of various accounts, is fixed in these new Charts at 90 leagues (l). As to a particular description of the coast, none of the Journals or Directories make any farther mention, than to avoid coming too near it in the night; because the land near the shore is very low, and not to be seen far, though it is high land up in the country; besides, there are no soundings, but very near the shore.

River Sindy.

I have fixed the bar of the River Sindy (m) $15'$ more Southerly than the English Pilot (n), according to the remarks of an experienced Portuguese Pilot upon some places in the East-Indies. As for the difference of Longitude, he makes the same as the English Pilot (o), who gives the following directions for entering this river: "The land to the Southward of the Mouth of the River shews very low; and 3 or 4 miles off the shore there is not above 4 or 5 fathoms water, hard ground (p). The river Sindy (q) hath a bar at the entrance, of about 13 or 14 feet at high water. The mark for coming in is a white monument (r), which will shew itself about 4 miles off: Bring this monument to bear NE. from you, and steer directly with it, till you come to the foot of the bar, where on occasion you may anchor in 3 or $3\frac{1}{2}$ fathoms; and then the aforesaid monument being brought NE $\frac{1}{2}$ E. you may go over the best of the bar (s) steering NEbE." But as there can be no dependance on instructions for passing the bars of great rivers, because the banks generally shift their places every year or two; therefore I would advise the procuring a pilot of the place.

The first place of any note, after passing the bar, is Larribundar (t); but the principal place for trade is Tatta (u).

I have not met with any remarks for the gulf between the River Sindy and the North coast of Guzurat, so that I was forced to follow the old Charts, except the latitude of Giants Point, which I have placed $25'$ more Southerly than Peter Goos, agreeable to several Journals, and particularly the Charts of Edward Wright, who has placed it in $22^{\circ} 10'$ N.

(g) Or Mosenden. (b) Or James. (i) This should be $25^{\circ} 25'$ according to the author's note, next below; or else it should be there $35'$, instead of $25'$ more Southerly.

(k) The English Pilot makes the latitude of Cape Jasques $25^{\circ} 30'$ N. and that of Cape Guadel $10'$ more Northerly: but this will not agree with their bearings, which he makes with the variation allowed, WbN. and EbS. I observed the latitude of Cape Jasques to be exactly $25^{\circ} 50'$ N. and have accordingly placed Cape Guadel $25'$ more Southerly; but I caution navigators to be upon their guard. The distance is there said to be above 80 leagues, which gives $48'$ for difference of latitude, and consequently makes Cape Goadel in $25^{\circ} 02'$ N.

(l) But, if he allows the course EbS: to be good, this distance will still increase the difference of latitude.

(m) Called by the natives Divelle, or Seven Mouths. (n) $24^{\circ} 45'$ N. (o) $5^{\circ} 30'$ W. from Surat. (p) Being a sort of coral.

(q) Sinda or Cinda. (r) The River Sindy would be very hard to be found, were it not for this monument, which is always kept white, to serve as a mark. (s) The bar going into the river is narrow, and has not above $2\frac{1}{2}$ fathom at spring tides.

(t) About 5 or 6 leagues from the sea.

(u) About 40 miles distant from Larribundar.

Of the Coast of GUZURAT.

THE coast of Guzurat, from Grant's Point to that at the West end of Diu, lies SE. Coast of Guzurat. and NW. 45 leagues. The shore is of a moderate height, but it is very mountainous up in the country. There are soundings of 36 fathoms, sand and shells, about 7 or 8 leagues off shore.

Diu lies in $20^{\circ} 45' N$. The harbour between the island and the continent, is very commodious; Diu. but the entrance is narrow, and difficult. This city has been of great note, and the capital of Guzurat; but now it is, in a manner, only a heap of ruins.

From the East point of Diu to Point Courba, the course stretches NWbW. (x) distance 19 Point Courba. leagues. It is very mountainous, inland; and the coast of a moderate height. From this point there runs out a reef of rocks, both above and under water, jutting out above 2 leagues, which must be carefully avoided.

When you have doubled the reef off Point Courba, your course to the Island Peram is NbE. 11 or 12 leagues: Come no nearer this coast than 11 or 12 fathoms (which you have about leagues off shore) on account of the shelves which encompass it.

Peram Island is surrounded with rocks. If you are bound to Gogo, which lies NNW. of this Island Peram. land, you must bring it to bear West, about 1 league; and from thence steer NW. into the road, which is deep enough for large ships, having 4 fathoms a league off shore; and is very secure at all times; for the island, and the shoals, which appear at low water, break the waves and keep them off. The tides here are very strong, especially the springs, when it is high water at o'clock.

Gogo lies in $21^{\circ} 45' N$. it is the only place for trade, on this coast: notwithstanding what Gogo. I have said, I advise those who would go there, or to any other part of the gulf, to take a pilot; because this navigation is both difficult and dangerous. I shall say nothing of the rest, for want of sufficient authority.

In respect to the coasts of Concan, Decan, Canara and Mallabar, I thought it necessary, as well in giving an account of the alterations made in the old charts, as for the directions concerning these coasts, to conform to the method prescribed by most Directories for this part; which begin at Cape Comaroon, and end at Surat: And, as most ships, that intend for this cape, generally make Point Gaula, on the Island Zeloan; therefore I shall begin here.

From POINT GAULA, on the Island ZELOAN (y), to SURAT.

POINT Gaula is placed, in the new charts, in $6^{\circ} N$. according to several observations (z), Point Gaula. agreeing with each other, with as much exactness as can be wished: And, as to the longitude given it, of $77^{\circ} 50' E$. from the Royal Observatory at Paris; this is adjusted by that of Cape Comaroon, and that of Pondicherry.

In comparing the reckonings of ships, whether sailing from Cape Comaroon to Point Gaula, or returning from Point Gaula to this cape, their bearings are found to be SE $\frac{1}{4}$ E. and NW $\frac{1}{4}$ W. distance 68 leagues (a).

If you should be becalmed in coasting along Zeloan, anchor in 30 fathoms, lest you be carried Wind & currents. off the coast by the currents. In crossing from one to the other, observe that (during the Easterly monsoons) the currents, about Point Gaula, set WSW. and athwart the gulf of Manara, to the

(x) NEbE. rather, as appears by the chart.

(y) Called by the natives Lamca; as much as to say Holy Land, or Paradise.

(z) Taken from ships Journal, and the Author's own Observations.

(a) Mr. Nichelson makes W $33^{\circ} N$. 65 or 66 leagues, from

Point Gaula to Cape Comaroon. See his Remarks and Observations, p. 95.

the SW. so that several ships have been driven unexpectedly upon the Maldivé islands: (b) To avoid which, be careful to coast the Island Zeloan, nearly as far as Colombo; from whence you may safely cross to Cape Comaroon: Nevertheless, if you should make the land to the Eastward of the cape, avoid coming near the coast; for it is encompassed with dangers. But, in the Westerly monsoons, you must (contrary to what has been said) take care of the currents, which set with great rapidity into the gulf of Manara, whereby many ships have been forced to the Northward of Negumbo, and with great difficulty got out of the gulf again: Besides, for want of this precaution a ship may be ashore in the night-time, when you reckon her to be 15, or perhaps 20 leagues distant. The skilful navigator, either way will be upon his guard.

Cape Comaroon.

Cape Comaroon lies in $7^{\circ} 56' N.$ (c) and $75^{\circ} 12'$ East longitude, from the Royal Observatory at Paris. The latter was determined by the bearings of the coast of Malabar, from Cochien to this cape. Its extremity is low land, covered with trees. To the northward rises a little hill, which appears like an island, when it bears East. The chart represents two different views of this cape; one as it appears from the West, the other from the East. Some Directories take notice of two rocks, 2 leagues SW. of Cape Comaroon: (d) for my part I know nothing of them; there are two to the SE. but they are not above a league off shore.

Point Cadiapatam.

From Cape Comaroon to the point of Cadiapatam, the course is WNW. (e) Westerly 6 leagues. Between the two, but nearer to the cape, is the river Manacoudy, whose entrance is encompassed with rocks. Point Cadiapatam forms the Eastern extremity of Colecha bay (f), which lies about 2 leagues to the NW. Several great trees are seen on the extremity of it. About $\frac{1}{4}$ of a league to the SSW. of this point there are two little islands, surrounded with rocks; to the SW. of which about half a league (g), there is a rock almost even with the water, the top of which appears like a buoy. Those who sail near the coast ought to be the more careful to avoid it, as it seldom breaks. From the intelligence of several, who compute the distance of it 3 leagues from the main land, I have placed it in my charts. The anchorage of Colecha is in 14 fathoms, about half a league to the Westward of the Westernmost of the above mentioned islands.

Colecha Road.

Island Enciam.

It is reckoned 8 leagues WNW. from point Cadiapatam to that of Veniam. Half way between the two lies a little island called Enciam, quite close to the continent, upon which a church is built. To the Eastward of this island there are several rocks, above and under water; and to the northward of these rocks is the river Tengayapatnam (h), which runs a great way in the land. In the rainy seasons long-boats may enter; but, in dry weather, there is a bar at its mouth, which shuts up the entrance of it to all but small craft; though within the bar this river is very navigable.

River Tengayapatnam.

Point Veniam.

At $2\frac{1}{2}$ or 3 leagues from the river Tengayapatnam, is seen a large wood; at the West end of which begins high red land, intermixed with white, and very steep to the seaward. These high lands continue a league beyond Point Veniam, which forms a bluff of the same lands. This point is known by the coast stretching from thence to the NNW. The village of Veniam, and the river of the same name, are 1 league NbW. off this point. Here the red land ends.

From Cape Comaroon is seen a number of churches along the sea-side. The coast is of an height to be seen 8 or 9 leagues, at sea; besides a chain of high mountains, that are seen inland, and extend above 150 leagues, Northward: They are called by geographers the Mountains of Gatta.

(b) This is confirmed by Mr Nichelson, in his Remarks and Observations, p 96. (c) The latitude of Cape Comaroon, as fixed in the English charts, differs but 4 min. from that in these new charts; as to that of $7^{\circ} 58'$ observed by P. Boucher, on the lowland, at the foot of the hill, it need only be observed, that the extremity of the cape is 2 min. more Southerly than the place where the observation was made. But neither the shape of the coast, nor the description given of it, agree with any of the charts that have appeared. Those of the English Pilot, though the most correct, are defective in this point; they make the distance from Anjanga to Ruteria or Veniam point. $9\frac{1}{2}$ leagues, whereas it is but 6: and from this last to Cape Comaroon, between which the coast forms two little bights, and stretches to the ESE. 15 leagues, they make it convex, and stretching to the SE. $9\frac{1}{2}$ leagues. The draught inserted in this collection was carefully taken upon the spot.

(d) There is also a rock even with the water's edge, seen by Mr Nichelson, on board his Majesty's ship Elizabeth, in the year 1759, which lies in about the latitude of $7^{\circ} 43' N.$ and bears nearly SW. from the little hill, to the Northward of Cape Comaroon, but distance about 7 leagues. (e) This remark is taken from a draught and directions, made upon the spot, which were communicated to the Author by M. Dumas, governor of Pondicherry, and commander in chief of the French settlements in the East-Indies. (f) Or Road rather.

(g) The distance, in the charts, is $2\frac{1}{2}$ leagues.

(h) Or Tegapatam.

Gatta. It is nothing like the same coast from the river Veniam to Anjanga, which is low to seaward, and is only discovered by the trees upon it.

I have marked a rock 14 leagues to the WbN. of Point Veniam. The English Pilot places it 14 leagues (i) WNW. of Cape Comaroon. This rock cannot have this position, in respect to this cape especially, according to the situation and extent of the coast I have above described: Notwithstanding this correction, I have placed it in the same latitude, and with the same difference of meridian from Cochien, as in the English charts (k).

A rock
WNW.
of Cape
Coma-
roon.

Before I proceed any farther in the description of the coasts of Malabar, Canara, &c. it is proper to observe that from the month of April to October, the winds blow there from NW. to SW. with storms, tempests, and much rain: Wherefore there is no navigating during this season, particularly in June and July, when this coast is impracticable (l). The season growing a little finer in August, the ships that have wintered there depart thence for the coast of Coromandel, and other parts Eastward. After the full moon in October, you may sail in this part very safely; the winds then blowing out at sea, from NNE. without storms; and along the coast, so favourably, that every day, about 11 or 12 o'clock, they come from the sea, and at midnight from the land. This regularity facilitates the navigation of those ships, who would sail up or down the coast; which you must always do pretty near, in order to take the advantage of one breeze, or the other. If you find yourself near land, before the wind blows from thence, come too in the mean time with a small anchor, so as not to steer a disadvantageous course: Likewise if you are sufficiently distant from it, you should also anchor, and wait for a breeze, in order to recover the coast: Above all, great regard must be had to the tides, which, during the calm that intervenes the change of wind, may in a little time make you lose the advantage you have gained. Often with a little wind you think you get, when in fact you lose. It is true, that it may be perceived, being near shore: In the day-time you may make some observation by the land; but in the night it is necessary to have recourse to the lead to know; or, let the long boat anchor near you, which may serve for a comparison, whereby you will know whether the current is favourable, or contrary: If the latter, it is best to anchor, and stay till it is diminished, or changed. I thought this instruction useful to those navigators, who are not experienced; as it may serve to make them avoid the errors, that generally prolong their voyages. I shall now return to the description of the coast.

Winds on
the coast of
Malabar,
Canara,
&c.

From Veniam point to Anjanga, the course is NbW. $6\frac{1}{2}$ leagues. The coast is low and woody; and you have soundings in 23 or 24 fathoms, $1\frac{1}{2}$ league off shore. Anjanga is an English town; the fort is square, defended by bastions, and there are several houses that make a very pretty place: There is a river, about 100 paces from the fort; but it is not very considerable. I often observed the latitude of Anjanga to be $8^{\circ} 30'$ N. The anchorage is to the SW. of the fort, in 12 fathoms, at 2 miles off shore.

Anjanga.

From Anjanga to Coislan (m), which is a Dutch factory, the coast lies NNW $\frac{1}{2}$ W. $6\frac{1}{2}$ leagues. The land is low to sea-ward, except 2 leagues to the Northward of Anjanga, where there is a red beach, steep at the sea-side; then the coast continues low as far as Coislan. Two leagues SE. of this last place, is a little river. You have soundings, $1\frac{1}{2}$ league off shore, from 15 to 24 fathoms, muddy sand.

Coislan or
Quilone.

Coislan is known by its flag, and the several tall trees that appear above the fort, which is encompassed with high white walls. The road is opposite the fort; before which there is a reef of rocks, that may be avoided, by coming no nearer the shore than 12 fathoms.

From Coislan to Calicoulan (n), another Dutch factory, in 9° N. it is $5\frac{1}{2}$ leagues: On this coast you steer NWbN. and NNW. coming no nearer it than the depth above-mentioned.

It is reckoned 21 leagues NNW $\frac{1}{2}$ W. from Calicoulan to Cochien. The land between them is low, and woody along shore. You may coast it in 7 fathoms, sand and mud: If you turn it, stand

Cochien.

(i) It is laid down in the charts of the English Pilot, WNW. Westerly, 24 leagues from Cape Comaroon. (k) Meaning the common Mercator or plain chart: But the English Pilot lays it down in latitude $8^{\circ} 10'$ N. whereas, in our new charts, it is placed in $8^{\circ} 17'$ N. The M. distance, in both, about 6 or 7 minutes E. of Cochien. (l) It is not impracticable, though it may be tedious and troublesome. For proper directions see Mr Nichelson's Remarks and Observations, p. 66, &c. (m) Or Quilone. (n) Or Carnople.

stand off no farther than 24 fathoms, or nearer than the depth above mentioned. Coming from the Southward, the town of Cochien can scarcely be seen; the trees almost hiding it. You only perceive some houses and the flag, which is hoisted upon a tower. This town is the chief settlement belonging to the Dutch, upon the coast of Malabar. It is encompassed with a good brick wall, fortified with bastions. The river, at the mouth of which it is situate, is very deep within the bar. They build ships there from 2 to 300 tons. This river may be considered as an arm of the sea, forming many little islands along the coast. The entrance is between two reefs, that extend themselves along the coast North and South, and project $\frac{1}{4}$ of a league into the sea.

If you would go to the town, in a boat or canoe; to know the right channel, steer towards the starboard point going in; and, when you are near the shoals, turn short to the larboard, and go between the two reefs. When you are near shore, and have doubled the starboard point, steer by one of the gates of the town, where there is a pier to land on. The best anchorage in the road, in the Easterly monsoons, is in 5 or 6 fathoms, with the flag-staff ENE. There is a little bank before the entrance of the river, on which is 4 fathom, hard ground: But you run no hazard by anchoring in the depth already shewn, where the bottom is oaze, and very good holding. The town of Cochien is plainly seen, coming from the Northward; it appears on that side very distinct. Its latitude is $9^{\circ} 58' N.$ and its longitude from the Royal Observatory, $73^{\circ} 43' E.$

Cran-
ganor.

From Cochien to Cranganor, another of the Dutch settlements, the coast lies NbW. $8\frac{1}{2}$ leagues. The land is low, and swampy along shore, and only perceivable by the trees; but inland exceeding high mountains, making part of those which, as we before observed, extend from Cape Comaroon. To the Eastward of Cranganor are seen two peaks, on the top of these hills, which make like the ears of a hare, when you are right off them.

Peniana.

Seven leagues N $\frac{1}{2}$ W. from Cranganor is Peniana, which is a Dutch settlement. To the Northward of this place there is a little river, by which the pepper is brought, but there is no passage into it for any but the very small country vessels.

Callicut.

From Peniana to Callicut, the coast extends NNW. 14 leagues. About half-way from one to the other you see Tannore; and $3\frac{1}{2}$ leagues from this last is the entrance of the river Beypour, which is also 3 leagues SSE. of Callicut. The small country vessels go in there. The coast between Peniana and Callicut is all the way woody; when you approach this last you perceive some little hills, near the sea-side, and at a distance the chain of Gatta mountains. There are also, in several places, little pagodas near the shore, which appear white. You may sail along this coast without fear, in 8 fathoms, muddy ground, if you come from the Southward, although you border near shore. The town of Callicut is not quite seen, because it is in a little bay. You see only to the Northward three white pyramids, which are called the Tombs, by which it is known. I shall add another mark, equally useful: this is a little hill upon the land, detached from the rest, which makes like two breasts, and which, though more Southerly than Callicut, appears to the Northward of it, coming from the Southward.

This town is the capital of the Samorin, and the place of his residence: where a considerable trade is carried on, in pepper and cardamums. The English have here a factor, and the French another; each of them hoisting their flag upon their factory. The latitude of this town is $11^{\circ} 18' N.$ In the road of Callicut, West of the English factory, lies a rocky bank, upon which you must avoid anchoring, lest you lose your anchor there; though at a little distance from it there is no danger. Small vessels may anchor between the shore and bank; but for large ships, the best anchorage is not to bring the French flag to the Southward of East, whilst that of the English bears EbN. in $5\frac{1}{2}$ fathoms, muddy ground, 2 miles (o) off shore.

It

(o) This distance is too near shore, being the very spot on which the Fordwich was a-ground; having just by it $4\frac{1}{2}$ F. Mr Nichellon says that, when the English flag staff bears NEbE. about 2 miles, there is a shoal with $\frac{1}{2}$ less 3 F. hard, rocky ground, which extends NNW. and SSE. about a large $\frac{1}{2}$ of a mile, and its breadth little more than 2 ships lengths; and has 5 F. just without it. See his Remarks and Observations, p. 101.

It is reckoned about 10 leagues NWbN. from Callicut road to that of Mahe: The Sacrifice rock lies about 4 leagues SbE. (p) from the latter, and about $6\frac{1}{2}$ leagues NWbW. from the former. This island or rock is all white, covered with the dung of birds, high and very steep on all sides, and about 2 leagues from the continent. The passage between them is very good, having no less than 8 fathoms in the middle channel. About one-eighth of a league without this rock you have 15 or 16 fathoms, and to the ENE. is the river Cotta, in which the pepper trade is carried on. The coast between Callicut and Mahe is low, and very woody, with several little rivers, and Indian villages, the principal of which is called Chambaye, about a league SE. from Mahe; it belongs to the prince of Bayanor. Near this river are seen several rocks along shore.

Mahe is the chief settlement belonging to the French, on the coast of Mallabar, of which Mahe. they have been in possession ever since 1725 (q). They have built there a town and several forts, which really make a very strong place. The principal fort is situate on a bluff point, at the mouth of a little river, that takes its rise a great way within land; it is navigable, for the little vessels of the place a great way up; by means whereof they easily convey the pepper and cardamums, in which is carried on a considerable trade; but a bank of sand, or bar that shuts up the entrance, upon which, at high water, there is but 7 or 8 feet, prevents middling ships from entering. On the other side of this river, on a hill, is built another fort, called Great Calais. The town is on the starboard-side, going in, beyond the first fort. They anchor in the fine seasons in $5\frac{1}{2}$ fathoms, the flag of the fort EbN. about $\frac{1}{4}$ of a league off shore: However, if any accident should oblige you to anchor there, before the full moon in October, you must come no nearer than 12 fathoms.

About 1 league NNW. from Mahe, upon a little hill, is the fort of Moelan, belonging to Moelan. the English, and a league more Northerly the town and forts of Tillecherry, which belong to and Tille- cherry. them also. Here is a small bay, into which runs the river Dermapatam; in passing it you see several great rocks, but they are quite in shore. Tillecherry belonged formerly to the French, who forsook it, and broke up the factory, May the 3d, 1682. Off Tillecherry is an island covered with wood.

To the Northward of this island, about $3\frac{1}{2}$ leagues, you see the Dutch fort at Cananor: It Cananor. is built on a low ground, covered with trees. The town of the same name is near it, and a little river passes at the foot of it.

Mount Dilla, in latitude $12^{\circ} 03' N.$ bears NW. about 10 leagues from Mahe road: This mount Mount. extends E and W. and forms a point that projects into the sea: As you come from the North- Dilla. ward or Southward, it appears separate from the coast: The neighbouring lands, which are very low, and only distinguishable by the trees, render this hill and point very remarkable to navigators.

From Mount Dilla to Mangalor, the course is NbW $\frac{1}{2}$ W. distance 16 leagues. Seven miles Mangalor. North of Mount Dilla runs the little river Canaple, to the Northward of which is Mount Formosa, so called by the Portuguese, from its beautiful appearance. This mountain is reckoned to stand 4 leagues inland; the coast hereabouts is low, and covered with wood. Somewhat to the Northward of Mount Formosa you see a little hill called Mount Beam (r).

COAST of CANARA.

MANGALOR is at the mouth of a great river, wherein the country vessels sail, which do not draw much water, and can go over the bar, with which the entrance is shut up. Here is a great trade in rice. On the South side there is a fortress of the king of Canara, to whom the town and country belong. The Portuguese have a factory here. The anchorage is off the river's mouth, in 6 or 8 fathoms, muddy ground. About

(p) Or rather SbW. according to Capt. Halden, jun.

(q) This place, with all its dependencies, on the Malabar coast, was surrendered to the English, on the 10th of February, 1761. For its longitude, and bearing, and distance from Cape Guardafoy, see preface, p. xii.

(r) Or Barn-hill.

St Mary's
Islands.

About 10 or 11 leagues (s) NWbN. from the entrance of the river Mangalor, lies the Southernmost of the St Mary's islands, which are several little islands that lie along the coast North and South, as far as off the river Bacanor or Caelempour, being about 6 leagues. There is a passage between them and the continent; but you must be experienced, and in a small vessel to attempt this passage, on account of divers rocks that lie under water, in many places about them (t). In latitude $13^{\circ} 50'$ North, NbW $\frac{1}{2}$ W. 5 leagues from Bacanor, runs the river Barsalor, to the Northward of which are two little islands, in shore; and, to the Southward, a chain of rocks, that extend along the coast.

Pigeon
Island.

Nine leagues NW. of the mouth of the river Barsalor, in $14^{\circ} 18'$ (u) North latitude, is Pigeon Island; though it is small it may be seen 8 or 9 leagues at sea. It lies WSW. of the river Batecala, and $2\frac{1}{2}$ or 3 leagues off the nearest shore, where are seen again several little islands. Pigeon Island has a rock, or little island, off it to the SE. and another to the East (x).

Carwar.
Islands of
Angedive.

Fourteen leagues NbW. off Pigeon Island is Carwar, which belongs to the English. Just by are the Angedive islands, on the largest of which, the English had a fort.

(y) You may anchor at Carwar, with the Duckey or Oyfter rocks, which lie at the entrance, NNW $\frac{1}{2}$ N. and a small rock in the road, open with the island of Angedive, to the NbW $\frac{1}{2}$ W. distant 2 leagues.

Or, you may anchor opposite the island of Angedive, the body of the island NEbE. $\frac{1}{4}$ of a league, and the South point of Carwar NbE. in $10\frac{1}{2}$ fathoms.

The passage into Carwar bay, is between the Oyfter rocks and the little island, near the South point. In this bay, near the said point, is a small cove, the entrance into which is SE $\frac{1}{4}$ E. Small ships may anchor here in safety, being sheltered from all winds. At the entrance into this cove, you have 4 fathom. A ship may ride here during the Western monsoons, without much hazard.

There is also a passage on either side the Oyfter rocks, in 7 or 8 fathoms, oazy ground.

COAST of DECAN.

Cape
Ramas.

ABOUT $4\frac{1}{2}$ leagues to the Northward of the Oyfter rocks lies Cape Ramas; distant $7\frac{1}{2}$ leagues SbE. from the bar of the river Goa. The cape is high land, and in coming from the Southward it appears very bluff. If you would go to Goa, and sail along shore, you must steer NNW. 2 leagues to the Westward of the Oyfter rocks, in order to give a good birth to the Serpent islands, situate 2 leagues WSW. off Mormagon point, which makes the South side of Goa river. They say there is a passage between these two islands, and that there is no less than 4 fathoms water in the channel, by keeping somewhat nearer to the Westernmost: Nevertheless it is more adviseable to sail without all. Those who are benighted ought to be upon their guard, because of the currents, which the ebbing and flowing of the river occasion, and which may alter the direction.

Goada or
Alguada
Fort.

(z) Having doubled the outer Serpent Island, you steer for Goada, or Alguada, fort, built on the North side of the entrance of Goa river, and you anchor in 8 or 9 fathoms muddy ground, the mouth of the river East, and Goada Fort NbE. about a cannon-shot, and half a league NW. off Mormagon point; beware of certain rocks, that are only seen at low water. If you would go farther up, you must take a pilot of the place.

Goa.

Goa is the chief settlement belonging to the Portugueze in the East-Indies, and the residence of the viceroy. This place is too well known to need a more particular description here, and which would be foreign to my purpose.

I have

(s) Taken from a chart drawn by M. Desjardins.
of 13° : Come no nearer them, in the night, than 16 fathoms.

(t) There are also the Permera Rocks above water, lying in the latitude
(u) $14^{\circ} 08' N$ as observed by Capt. Halden, jun.

(x) The one SW. and the other W. according to last mentioned commander; but Mr Nichelson has them as our author.

(y) English Pilot.

(z) From the Portugueze Directory.

I have made it (as I hinted in the Preface) my chief aim to determine the longitude of the different places on the coast of Malabar; therefore its longitude may be looked upon as exact, which has been observed to be $71^{\circ} 25'$ East from the Royal Observatory, at Paris; and its latitude $15^{\circ} 31' N.$

Ten or 11 leagues NWbN. from the road of Goada, are the Southernmost and Westernmost of the Burnt Islands (a); in number 11. The Northernmost and largest lies in 16° North latitude, and distant $1\frac{1}{2}$ league WbS. from the river Vingorla. Though the passage appears clear between these islands and the continent, it is best to sail wide of them.

Burnt
Islands.

COAST of CONCAN.

NINE leagues NNW. off the largest of the Burnt Islands in (b) $16^{\circ} 25' N.$ lies point Vigador, which makes the South point of Ixdruc (c), Angria's principal port: This is a bluff point, whereon is a fort well lined with guns, and at the foot of it a reef of rocks, even with the water. This port is about $1\frac{1}{2}$ league in depth, to the SSE. and $\frac{1}{4}$ of a league wide. The North point also surrounded with a reef. Within this harbour you have 12 or 13 feet at low water, and 5 fathoms depth between the two points that form the entrance.

Points
Vigador
and
Ixdruc.

The ships that sail along the coast of Canara and Decan, whether bound to Goa, Bombay or Surat, should be on their guard; as the Angrians, Sangarians and Savejees, who are corsairs, watch continually to surprize them: they know how to take the advantage of the calms, and to attack with the greatest surety. It is very seldom one alone ventures, without being accompanied with several others. They have generally chace-cannon, of 12 or 18 pounders, and some of less diameter. Most of their ports are situate between Goa and Bombay. Of late years the English ships, as well as others, are obliged to keep grabs to defend themselves.

Angrian
Corsairs.

Three and a half or four leagues to the Northward of Ixdruc is Geitapour or Rajapour. In 1682 and 83 the French had a settlement there. Here follow the instructions given by those navigators who have frequented this place.

Geita-
pour or
Rajapour.

Coming from the Southward, the port of Geitapour is known by a fort, which is 4 leagues distant from it to the SE. which may be plainly seen 2 leagues off. To the NW. lies Cape Geitapour: This is a steep eminence, upon which are seen several clusters of trees, which may be taken at first sight for wind-mills. A little farther in-land, above this eminence, there is a little round hill, at which you might see (at that time) three great trees, remarkable, forasmuch as all together they appear like a little fort. It was here the French factors formerly hoisted their flag. A little to the Northward of the entrance of Geitapour, is seen a steep platform, resembling an island, the soil of which is like Iron-mine; and farther Northward is a sandy bay, with another platform of the same kind, but lower and quite black. In the middle of the sandy bay you see a reef, very near shore. The coast to the Northward is higher than in this place. There is no other platform, nor black ground, besides what I have mentioned.

NW. from Cape Geitapour there is a reef, of which take the following remark.

The end of this reef is NW. of the North point of the bay. Half a league without this shoal you have 7 fathoms water, rocky ground; and within it, about a musket-shot, there is a fathom and a half of water, the same bottom; and elsewhere about it 8 fathoms, muddy ground. When you enter the bay of Geitapour, you must, in coming from the Northward, keep in 10 fathoms, on account of this rock, until you see the bay open, then keep on the South side, and look for the great tree on Mount Gnafil, at the NE. end of the bay, in which you may anchor in 5 fathoms, muddy ground.

From

(a) Called, by the English, Vingorla Rocks

(b) Portuguese Directory.

(c) Taken from a particular draught, sent to the French company by a mate belonging to the ship Jupiter, which was taken from these pirates. This place is also called Vizendruke, but is better known by the name of Geriah or Gyria; which was taken from Angria, by Admiral Watson and Col. (now Lord) Clive, on the 13th of Feb. 1756. For the particulars see Cambridge's War in India, 1766, 7, 8, but since delivered to the Marattas, pursuant to treaty.

Bar of
Choul.

From Geitapour or Rajapour, to Choul bar, the direction of the coast is NNW. distance 44 leagues. Here you meet with many ports, and the mouths of several rivers, of which I can give no particular instruction, for want of memoirs. Some of these ports belong to the Angrians, some to the Savejee, and others to the Sedee (*d*). They are none of them of any importance to trade. The particulars, as you find in the fifth chart, are taken from those that are esteemed the most correct of these parts. I follow them the more willingly, as they came from a navigator (*e*), who hath frequented this coast, and whom I think too judicious to have let any thing material escape his observations.

The soundings are placed according to the distances, corrected by the latitudes observed, and from the accounts extracted out of above 20 journals: So that I may safely say I have brought it, by this means, to the greatest exactness possible.

When you turn it along this coast, in standing on, come no nearer than 9 or 10 fathoms; because, under that depth you may find danger in several places. I thought myself obliged to insert this article here, as I found it in several journals, from which I extracted the soundings.

Choul lies in $18^{\circ} 35'$ N. latitude. They anchor right off it, in 8 or 9 fathoms water.

Three leagues and a half SE. (*f*) from Choul is a great river, at the entrance of which there is a reef that breaks very much. In the midst is a rock, which appears above water. The English charts call this river or port, Dunda-Rajapour. From thence to Choul, the coast is lined with rocks. The fort of Choul is placed on a little eminence, which may be seen 4 leagues at sea; at the foot of which the town is built. Sailing along the coast you see several buildings, and within land many rugged mountains.

Coulaba
Island.

Off Choul is a flat island, named Coulaba, on which the Angrians have a fort. From hence to the opposite shore there are stakes, on which the fishermen hang their nets: In several places they reach two leagues off shore. You must take care, and not pass between them without great necessity.

When you anchor before Choul bar, you may plainly see the Islands Hunary and Cunary, which lie 3 or 4 leagues to the Southward of Bombay. The coast between these two is filled with aldees, or villages of the Indians.

Bombay.

Bombay lies in 19° N. and $73^{\circ} 06'$ E. longitude from London (*g*). It is the finest port on this coast; and the best belonging to the English, in the East-Indies. Here it is that the ships winter and are refitted. The entrance of it is very difficult, on account of the many shoals found there. Notwithstanding the directions the English Pilot gives of it, you must be well experienced to enter it: For if you compare this direction with the draught inserted by Thornton, you will find it not very intelligible. This hath induced me to suppress both, till better accounts can be got (*h*).

Bacaim or
Basseen.

From Bombay to Bacaim is 10 or 11 leagues NbW. (*i*) The shore between the two is low and even, except some hillocks; within land it shews itself also in hillocks, but higher. You may sail along this coast in 10 or 11 fathoms free from danger, except the fishing stakes that are found very far out, and within which the passage is not safe. Here is good anchoring ground, if becalmed, or the tides are against you, which between Bombay and Bacaim set NbE. and SbW. 3 or 4 leagues off. The floods thence set to the NWbN. and the ebb SEbS. as far as Cape St John: The freshes out of the country make the water very thick.

Barfabas.

Before you come to Bacaim, you meet with a river, and a little port, called Barfabas; it bears EbS. when the Southernmost part of the hill, situate to the Southward of Bacaim, bears EbN. There

(*d*) The Sedee is the vice admiral of the Mogul's fleet.

(*e*) M. Desjardins, governor of the port of Pondicherry.

(*f*) Mr Nichelson has it 7 leagues, NNW $\frac{1}{2}$ W. In short, the coast between Goa and Choul is most confusedly represented by different authors; owing chiefly to mistaking the names of places one for another. Indeed this coast being mostly inhabited by the Angrians, and other piratical princes, navigators, in common, have seldom chose to come near enough to make distinct remarks of it.

(*g*) For the course and distance from thence to Cape Guardafoy, see Preface, p. xii.

(*h*) I shall give some authentick accounts for going into this harbour, and avoiding the dangers, in the Appendix, p. 133, 4. See also Nichelson's Rem. and Observ. p. 23, &c.

(*i*) Memoirs of M. Houffaye, and journals of several ships.

There is a point that projects a little into the sea, from which extends a reef of rocks above water. The town is within this point, in which is built a little tower, encompassed with coconut trees: It is on this tower the Portuguese hoist their flag, and have a battery of guns that front the road. The coast to the Northward of Barfabas is sandy, and in some places rocks, which do not extend, at farthest, above a quarter of a league off shore.

About Bacaim the coast is even, and at the end is a valley, wherein the town is situated; to the Southward of which is a high round hill, on which the Savejee has a fort.

When this bears East, you then have open the entrance of the port of Bacaim, placed between two little islands or rocks, between which you must pass, one on the North side, the other on the South. This port having but little water, is only fit for very small vessels.

Some years ago a considerable army of the Marrattoes, after a siege of 18 or 20 months, took the city and fort of Bacaim from the Portuguese.

To the NNW. of Bacaim is an island covered with trees, and detached from the coast.

It is reckoned 12 leagues NNW. from Bacaim to Cape St John. In this part keep off shore, at least $3\frac{1}{2}$ leagues, on account of the rocky banks which advance into the sea at 2 or 3 leagues: from the latitude of $19^{\circ} 40' N.$ at this distance, the depth of 17 or 18 fathoms.

If necessity oblige you to turn it, you must come no nearer than 16 fathoms, for fear of falling suddenly on some places of 7 or 8 fathoms, foul ground. The tides, which generally set NNE. and SSW. sometimes incline towards shore; you must observe this, and not anchor, unless you find it impossible to stem the current.

Cape St John lies in $20^{\circ} 2$ or $3' N.$ (k). Three or four leagues inland, to the Southward of this Cape are two high hills or peaks, one called the Peak Anoul, in form of a pyramid, the other like a castle. All the coast is high from thence to the cape, the extremity of which is highest. Along shore the land is low, and covered with trees.

Cape St
John.

When you have doubled this cape, and bound for Surat road, keep the mid-channel, where you have 16 or 17 fathoms, mud. Above all take care of sailing too far to the Westward, and not nearing the outer banks farther than 20 or 22 fathoms, mud; for if you find, upon sounding, sand, gravel or rock, you will be near these shoals, over which you cannot pass, even at high water, and then you must immediately stand to the Eastward, to regain the channel: Neither on the East side must you come under 10 fathoms: but if your soundings are gravel or rocky, you must stand right off to the Westward: Too near the land is dangerous, the currents horfing you thereon in a calm; and a good way out lie several rocks under water. Take good notice of this observation, till you have got to the Northward of Demawn; then you may near the coast at pleasure, as the bottom all along is soft mud, as far as Surat road.

Road of
Surat.

The coast between Cape St John and Surat river is low and even; about 3 or 4 leagues to the Southward of the entrance there are 3 little hills. They anchor in Surat road, in 10 fathoms mud, 3 leagues off shore, and the mouth of the river NbE. The sea rises and falls about 3 fathoms. Three leagues Northward of Surat river, lies the port of Swaley: To sail thither you must have an able pilot, on account of the many shoals which you meet with in the passage.

Surat is 5 leagues from the river's mouth, in $21^{\circ} 10' N.$ latitude, and $69^{\circ} 52' E.$ longitude from Paris. This city is a place of the greatest trade in the East-Indies. The French, English and Dutch, have each a factory there.

Surat.

Of the LACCADIVE ISLANDS.

TO the Westward of the Mallabar coast is the Archipelago of the Laccadives: This is the general appellation for the islands to the Northward of the Maldives: They extend from 10° to $12^{\circ} 50' N.$ latitude. There are 19 principal ones; most of them surrounded with shoals

Lacca-
dive
Islands.

(k) For the course and distance from hence to Burnt or Bird Island, in the Gulf of Arabia, see Pref. p. xii.

shoals and rocks, and steep too; so that navigators are at a loss to know when they are near them, which makes their approach very dangerous.

Islands
Seuheli-
par and
Calpenia.

Between these islands are many passages, through which the ships bound from the Indies, towards the Red-Sea, or the Persian Gulf, commonly proceed; the most known, especially by European ships, is that of Mamala, commonly called the $9\frac{1}{2}^{\circ}$ channel. It is bounded on the North by the Islands Seuhelipar (l) and Calpenia, and on the South by the Island Malika. The first of which lies in 10° N. latitude (m), and has a reef off the South point, which reaches near 2 leagues. This island (n), like all the rest in this cluster, is exceeding low, and is only perceived by the trees that cover it, so that it cannot be seen at more than 6 or 7 leagues off, in fine weather, according to the observation of M. du Fai, captain of the ship *Amphitrite*, who made it in 1736. The next day he had also sight of Calpenia Island, equally low and woody: I saw it in 1733, and observed its latitude to be 10° N. it appeared to me encompassed with rocks (o): Its distance from the coast of Mallabar, and the other islands, as exhibited in these new charts, is founded on my own experience, and the remarks of several navigators, who have passed between them.

Island
Malique.

The situation of the Island Malique (p) is very uncertain: Several make a doubt even of its existence; but, as I find others of a different opinion, I could not think myself sufficiently authorised to omit it. I have placed it therefore in $9^{\circ} 15'$ N. latitude according to the opinion of the latter.

The extent of the second passage is known with more certainty than the channel of Mamala: It extends between the island of Kelay or Sindal, and the Northernmost of the Maldives. M. Houssaye, an experienced captain of the *French* India company's ships, saw them both, and observed their latitudes. I thought it might be of service to insert here an Extract of his remarks, because many navigators think themselves exposed to an evident danger, in passing this channel, which hitherto hath been but imperfectly known.

EXTRACT of the JOURNAL of the SIEUR HOUSSAYE, SECOND CAPTAIN of the SHIP LE PRESIDENT.

“THE first of July, 1685, at five in the morning, we had sight of four of the Northernmost Maldivian islands, bearing SWbW. about 3 or 4 leagues: The largest of them seemed to us about a league in length; they are all very low, it is the trees on them only that make them visible, which in fine weather may be seen 5 leagues off. The Northernmost I take to be in $7^{\circ} 15'$ N. latitude. At 8 A. M. being 2 leagues from these islands, we sounded, but no ground with 120 fathoms of line. Coasting the said islands about 10 o'clock, we made 7 others, of an equal height; that is to say, all very low. There appeared some rocks apart, but very near the land. Off the third island to the Southward, we saw breakers a great way off, and all seemed very dangerous.”

From this journal, and the report of several navigators, it is certain that the Northernmost of the Maldives doth not exceed $7^{\circ} 15'$ (q), and that the Southernmost doth not extend below the Equinoctial-Line.

Another

(l) In Capt. Cornwall's chart, made from a description given of these islands by a pilot born on the Island Qualpena, it is Soolepaul. Indeed, these islands are so variously named and placed, as well in latitude as longitude, by different authors, that there are but few can be known to mean the same.

(m) Mr Nichelson, in his majesty's ship *Elizabeth*, 1764, was in latitude, by observation, $9^{\circ} 49'$ N. and made longitude from Calicut $3^{\circ} 06'$ W. when he saw the Island Seuhelipar from the mast-head, bearing NbE. dist. 6 or 7 leagues; so that its latitude must be about $10'$ more Northerly. He observed the variation in the morning, before they saw the island, $1^{\circ} 05'$ W.

(n) Seuhelipar.

(o) Capt. Cornwall says it has a river, where vessels of 200 tons may float and clean.

(p) This I take to be the same that in Cornwall's chart is named Mincoy; though he lays it down in but $7^{\circ} \frac{3}{4}$.

(q) But in these new charts they are made to extend to $7^{\circ} 30'$ N. In Cornwall's chart they are laid down but in 6° N.

Another Extract from a Journal of the same Author, in the same Ship, in 1687.

"FROM Tuesday noon, the 29th of July, to Wednesday the 30th, at half an hour after one in the morning, by light of the moon, we saw the Island Sindal (*r*). I reckoned that I was then in $8^{\circ} 20' N.$ lat. and about $95^{\circ} 55' E.$ long. from the meridian of Teneriff, being at that time about half a league (*s*) from the said island, which is low like the islands of Glenan, on the coast of Bretagne. We saw breakers abreast of us; and hearing the noise of the surf very plain, we put about and sounded, no ground with 60 fathoms of line; the body of the island bore SbE. the wind being then at SW. We found ourselves too near land, so stood off a little; and at day-break we saw this island, which is very low; and especially on the West side, where it is almost even with the water, and where there is a long point, whereon the sea breaks very high. It is higher at the East end, and may be about 4 leagues long. In sailing to the Northward of it, it appeared to us round, having large rocks about it, and especially at the NE. end, where we saw them run out a great way. This island may be seen 4 or 5 leagues off. In short, it is very dangerous, and I do not think the 8° channel so good as that of $9^{\circ} \frac{1}{2}$, which I have remarked before in several different voyages: I find, however, that one may pass clear of the Maldives, between $7^{\circ} 55'$ and $7^{\circ} 20' N.$ latitude; but I rather prefer the passage of $9^{\circ} \frac{1}{2}$, as above mentioned."

I shall say nothing of the passage which might very probably be found between the Island Malique (whose situation is undetermined) and that of Kelay. I shall content myself with informing those navigators, who come from Mosambique channel (*t*), from the Islands of France (*u*) and Bourbon (*x*), or from any other place situate in the Western part of the Indies, and are bound for the coast of Coromandel, Bengal, and other parts Eastward, that they may safely pass between the two channels I have described above, provided they take care to keep within the latitudes I have prescribed. By this means they will shorten their voyages, and not expose themselves, on the coast of Mallabar, to the Westerly winds, that blow there with great violence, during the height of that monsoon, as I have elsewhere remarked, that it might be a caution to those that sail to the Northward of the Laccadives: It is not always sufficient, in order to avoid this danger, that you keep that coast at a great distance; this precaution may sometimes be rendered useless, by the sudden violence of winds, and currents.

Some navigators prefer the North passage to the channel in $9^{\circ} \frac{1}{2}$, on account of the heavy squalls and rains that happen between these islands, as well as on the coast of Mallabar, during the months of June, July and August; so that ships bound to the Indies may run ashore, for want of being able to observe the latitude, whereby they are uncertain of their true situation with respect to them; and the currents met with near the islands, make one more liable to mistake hereabouts. A motive so important induced me to examine carefully the Journals of those ships (*y*) that have sailed among these islands. In this examination I found, that the observations

(*r*) This island is the same as in these new charts is called Kelay, and in the English Pilot Canala.

(*s*) This determines the latitude of the Northernmost part to be about $8^{\circ} 18' N.$ In May, 1751, Capt. Nic. Webb, in the Warwick, saw this island, (which he calls Canala, after the English Pilot) at 11 A. M. bearing NEbE $\frac{1}{2} E.$ 5 or 6 leagues. They then steered EbN $\frac{1}{2} N.$ 4 miles, and at noon had a very good observation, by Hadley's quadrant, in latitude $8^{\circ} 04' N.$ whereby it appears, that the body of it lies in about $8^{\circ} 10'$ or $11' N.$ He made above $29^{\circ} M.$ dist. from Grand Comaro; but supposes he had met with strong Westerly currents; and therefore those bound to Zeloan, &c. should always make this island, as the *M.* distance cannot be depended on. He made from thence about 7° Easting to Zeloan, and describes it as very low and woody; about 3 leagues long; lying nearest ESE. and WNW: That off the WNW. end, there is another small island, with a few trees on it; and a reef breaks from one to the other. As it is so very low, would advise lying-to in the night, when near it, and keeping a good look-out in time. Next year also, in the Edgemoor, Capt. Pearce, they made this island, calling it Mincoy, after Capt. Cornwall; and made its latitude $8^{\circ} 17' N.$ They allow it to answer the description given of it by M. Houffaye, and add further, that on the Westernmost end there are a cluster of trees; that in some places it is bare; and that there are 4 remarkable trees, paired, about 2 leagues from the E. end; or perhaps 2 miles, else it had been more expressive to have said about the middle of the island, as they allow the whole length but 4 leagues, and Capt. Webb but 3: Though I am apt to think, the two islands he mentions join together, at low water, as no notice is taken thereof by others; and then he may agree in the length with them. They made $6^{\circ} 48' E.$ *M.* dist. to Dondre Head. (*v*) Called by the English the Inner Passage. (*u*) Mauritius.

(*x*) Mascareen.

(*y*) The ship called Le President, in July, 1685; the same, in July, 1687; le Perle d'Orient, in August, 1700; le Saint Louis, in August, 1702; le Lys, in July, 1730; le Saint Louis, in July, 1732; le Gatathée, in October, 1733; le Dauphin, in June, 1734; le Heron, in Sept. 1736; le Triton and le Fleury, in July, 1737; le Chauvelin, in July, 1739; le Fleury, in July, 1739; le Maurepas, in July, 1739; le Triton, l'Argonaute, in August, 1739; le Comte de Toulouse, in June 1740; l'Argonaute, in June, 1741; and le Chauvelin and le Triton, in June, 1741.

servations of latitude were not so rare as these navigators had persuaded themselves they were; and when a navigator, who had got the better of his prejudice, will make use of an instrument (z) more exact and convenient than the old ones, he may have observations more frequent. Besides the meridional heights of the sun, there are several other different methods, and equally certain, to find the latitude at sea (a). On approaching these islands the currents set to the Southward, as they do also through the channels: As to the rapidity, the examination of the above journals gave me to understand, that the greatest difference caused by these currents, in this latitude, doth not exceed 20' in 24 hours, and generally 12'; so that, if the darkness of the weather, or any other inconveniency, prevent your observation of the latitude, you may by their proportion compute the difference, and direct your course accordingly for a sight of, or soundings off, the coast of Mallabar, which you should make before you attempt the Island Zeloan (b). Several navigators have neglected this precaution, but their proceedings did not appear to me prudent enough to be followed; because, after a long voyage, there may be a considerable error in your reckoning, and when you think you have passed them (c), and bear away to the Southward, you run in danger of running on the Maldives, or some other island in the channel. The change of colour in the sea, which generally evinces soundings, is not in this part a certain sign (d). You should absolutely assure yourself by soundings.

Banks of
Cherba-
niang and
Padoua.

To the Northward of the Laccadives, you find the banks of Cherbaniang and Padoua, which extend to 13° N. latitude. These rocks are so much the more dangerous as they do not break, and are not perceived till you are upon them. You find again some banks more Northerly, whereon many ships have foundered, and which, according to their report, are not dangerous. But, that you may not be deceived by the conformity of depth upon these banks, with that of the coast of Mallabar, take the following direction: The navigators that sail to the Northward of the Laccadives (e), generally content themselves, especially in bad weather (f), with getting soundings on the coast of Mallabar; then they steer SSE. and SbE. in order to keep mid-channel between the islands and the coast. Now, supposing this sounding had been on one of the banks above mentioned, it is evident, (considering their situation, in respect to the islands) that a ship by this course would hazard the running ashore on one of them. The best way to avoid this danger, when the weather will not permit you to see the coast, is not to depend upon your first sounding; but keeping your course some time, if you lose soundings, it is a true sign you sounded on one of the banks; but, if they continue, you may be sure you are near the coast. This observation deserves the attention of those who have the care of ships committed to their charge. For my part, I think it best to make the coast of Mallabar in 14°, from 10' to 20', and to get in good time into this latitude, if coming from the Southward (g), so as to have nothing to fear from the banks of Cherbaniang, which shoal is placed 80 leagues from the coast, according to some, and 100 leagues, according to others.

Forty-five leagues West of Goa, some pretend to find a bank, extending from North to South, upon which are found 30, 40 and 50 fathoms. Some persons have assured me, that the Angrian corsairs used to go thither to anchor in fine weather, to wait for ships to plunder. This single authority did not appear to me sufficient to place it in my charts; neither have I memoirs circumstantial enough to determine exactly its extent from North to South, nor from East to West.

(z) The new English quadrant by reflection, invented by Dr Hadley.
M. de Maupertuis.

(a) See the Treatise of Naval Astronomy, by M. de la Garde, Jasier officer of the king's ships, commanding a ship of the company's, in passing this channel found the sea changed, as if it had been in 30 fathoms; he at that time reckoned himself ashore, and therefore might readily have accounted for this appearance; but this able navigator thought this not sufficient: He sounded several times and finding no ground in 100 fathoms, continued his course Eastward, and would not sail Southward till he had seen the coast of Mallabar: The consequence proved the benefit of this precaution, without which this ship had inevitably run ashore on the Maldives.

(c) The Laccadives.
Arabian or Persian Gulfs.

(d) And especially if you have not seen any of the islands.

(e) Viz. those from the

(f) Or the Westerly monsoons.

(g) And bound to Goa, this method is very well; but bound to Zeloan, &c. I see no business a ship, coming from the Southward, has to the Northward of the 9° $\frac{1}{2}$ channel, suppose they do not choose either of those to the Southward, though there is no danger in going through them, if due regard be had to the variation; and if bound to Bombay, in the Westerly monsoon, I would make the land in the latitude of Hunary and Kanary, and not before.

Of the Coast of the Island ZELOAN.

MANARA (*b*), whose Southernmost part lies in $8^{\circ} 57'$ North latitude, discovers itself by the clusters of cocoa-trees, to the Westward of the river (*i*); at the enterance of which is 13 or 14 feet water. A ship of any tolerable size should not anchor, but at a good league off, to the Westward of this channel. Along Manara island (*k*), within gun-shot of the shore, you have 20 or 21 feet water. In the fair way, there is a reef, which lies NW. and SE. off Aripa, the South end of which bears from the passage of Manara SWbS. about 4 leagues, and the North end, WSW. $4\frac{1}{2}$ leagues. This reef is composed of craggy rocks; over which there are several different passages; but they are only navigable for the country vessels, and that in calm weather; for when the winds blow a little fresh from the Southward, it breaks over all: you should therefore stand to the North-westward, 'till about a league off its North point; and then you may, in small craft, shape a course without fear towards the passage of Manara, or any other place you think proper. Within this reef, towards the straits, or passage of Manara, the depth decreases gradually to 13 or 14 feet water.

From Manara to Aripa, the course is SWbS. 14 miles. The coast forms a sort of bay between the two. Aripa is known by a small village, and a little church; off which, NWbW. 2 miles or thereabouts, you meet with a rock, which hath 8, 9, or 10 feet water; so that the country vessels can pass over it. In the right channel you find 14, 15 or 16 feet water. It is convenient then, in sailing between Manara and Aripa, to keep this depth, and come no nearer, nor stand farther off shore.

The barks or small vessels, bound from the Southward to Manara, should observe, when they are to the Northward of the West point Cardiva (*l*), to keep about 3 leagues off shore, in 18 or 20 fathoms, pebbles; then to steer NNE. and NEbN. till they bring the church of Aripa to bear East: keeping this course when in 4 or 5 fathoms they will see the reef break, and the rocks from the shore to the reef: then they shape their course by keeping in the above depth of 14 or 15 feet rocky ground.

But, if you are bound, from the Southward, to Manara, in larger ships; when you are 3 leagues to the Eastward (*m*) of Cardiva point, in the above-mentioned depth, be sure to steer North till you see the reef break, and then stand off to the Westward about a league, till you are round it. From thence you may see the island of Manara to the NE. when you may hawl in again, and approach it just as is convenient for your ship, constantly sounding and keeping a good look-out. It sometimes happens in this track, that from the depth of 20 to 25 fathoms, it diminishes 2 or 3 fathoms all at once; and this sudden change happens either near the land or reef: but, you need not be at all concerned, if it is off the island; for, having once got into 7 or 8 fathoms, you have regular soundings, decreasing gradually towards shore to 5 fathoms, sandy ground. If, near the reef, you have 8 fathoms, pebbles and gravel; it is to be avoided.

From Aripa to the Island Caridien, it is 7 or 8 leagues SWbW. This island is about 2 leagues in length, and is of an irregular form, of several points; the Southernmost lies in $8^{\circ} 26'$: it is a reddish hill, steep and almost in the shape of a cone. You have 8 or 9 fathoms 4 leagues off, rocky ground. In clear weather, coming from the Westward, 4 or 5 leagues off, you may see the bottom in 15 or 20 fathoms. In approaching it the depths are unequal, and require to keep the lead going. Be not surprised if, after having but a few fathoms, you on a sudden find 8 or 9; because from $3\frac{1}{2}$ leagues off shore, as you stand towards it, the depths are very uneven,

(*b*) Or Manaar. (*i*) What is here called the river, I take to mean the passage, between the islands Manaar and Zeloan,
 (*k*) That is, along the East end thereof. (*l*) Or Gardive. (*m*) Or rather Westward.

uneven, between 8 and 9 fathoms, to about a league off the island, where there is a bank of but 3 fathoms, the bottom of flint: when you have passed it, the bottom is sandy, in 5 fathoms. To the South-eastward of this island there is a bay about 2 leagues from Calapeten (*n*).

Point of
Calape-
ten.

From the South point of the Island Caridien to the SW. (*o*) point of the island Calapeten, the course is SW. $4\frac{1}{2}$ leagues. I just now mentioned uneven soundings; they are, in this part, nearly the same. The bank of 3 fathoms, which I mentioned in the preceding paragraph, is situate (*p*) within a musket-shot of the shore, and extends beyond Calapeten: about 2 miles from thence lies a ledge of rocks, on which the sea breaks. This point is easily known by a tuft of trees, exceeding thick; there is nothing like it, except on the (*q*) main to the Eastward, where you perceive about 100 cocoa-trees, between which and this thicket, at the bottom of a little valley, is a bight called Naverary, or Navecary bay, which affords no shelter from the Westerly winds: besides, the bottom (as in the adjacent parts) is so foul and dangerous, that there is no anchoring in any part thereof, without risking the loss of your anchor, even within the bank of 3 fathoms; except very near Caridien or Calapeten, in 4 or 5 fathoms.

River of
Chiloe.

From the point of Calapeten to Chiloe, it is reckoned 8 leagues. The course, to sail clear of all, is SSW. To the Southward of the bay Naverary begins a ledge of rocks and coral, which extend along the coast to within a league Northward of Chiloe, where, as it widens about a league, it may be proper to keep the lead going: farther off shore the bottom is sandy. The river Chiloe discovers itself by a sandy mountain, on which may be seen some bushes, and a little round hill inland. If you come from the Southward, you may sail near the coast, till opposite this river; but, to the Northward of it, you must keep, for 2 miles, wide of this ledge of rocks and coral, before you stand in for the shore. The bottom between Calapeten and Chiloe is of fine sand, sometimes a little coral; but, the nearer you approach Calapeten, the ground is still worse for anchoring.

Morabel.

From the river of Chiloe to Morabel, the course is SbW. Westerly, it is deeper between these two places than any above-mentioned. You may approach the coast, by the help of the lead. Morabel is known by two or three gardens of cocoa-trees, which trench a little inland; and, coming from the Northward, resemble those of Naverary or Calapeten.

River of
Cayanel.

From Morabel to Cayanel the coast lies SbW. 4 leagues. Cayanel is a river, that makes a sort of point, in sailing from the Northward: whereon are a number of cocoa-trees. The bottom is good, between these two places; and especially near shore.

Negom-
bo.

From Cayanel to Negombo, the course is SbW. 2 leagues. From the Northward, the land seems to form a bight. If you are to pass by Cayanel, you must edge a little from it, on account of a ledge of rocks, which are found between this place and Negombo; and keep 2 leagues off shore, in 7 or 8 fathoms, till you bring Negombo to bear SEbS. By this means you avoid a rock, which lies NNW. off the flag-staff, or the North point of the fort; at the foot whereof you have 6 fathoms, and upon it 10 feet. When bound to Negombo from the Southward, bring the fort to bear SE. and keep that course till you anchor, without borrowing any more to the Northward. Negombo is known by a point the most projecting upon the whole coast, on which is a thick wood of cocoa-trees. Off this point lies a ledge of rocks, of small extent.

Colombo.

It is computed 6 or 7 leagues SbE. from the outer point of Negombo to Colombo. You find a good bottom all the way, except it be over-against a little river, where a rocky point projects about 2 miles. Keep in 10 or 12 fathoms. You may anchor before Colombo in from 6 to $7\frac{1}{2}$ fathoms, the flag-staff bearing South; but come no nearer the river, because of the rocks lying at its mouth, and round the South point.

Galketin.

From Colombo to Galketin the course is South 3 leagues. It is a little round bay, open and without shelter. Ships generally coast it about 4 miles off, in 13 fathoms, sandy ground.

From

(*n*) Or Calpentin.

(*o*) Westernmost, more properly.

(*p*) i. e. The inner edge.

(*q*) The island Zeloan,

From Galtekin to Panture it is $3\frac{1}{2}$ leagues, South. To sail from one to the other, keep in 18 fathoms, because under 10 fathoms is rocky ground. Panture is a river, known by two rocks above water: they are on the North side of the entrance, at the distance of two gun-shots. The anchorage is to the Southward of these rocks, in 10 or 12 fathoms, 2 miles off shore. Panture.

From Panture to Calitura is SbE. distance about $3\frac{1}{2}$ leagues. To the Northward of Calitura lies a rocky bank: on the South side of the river is the fort, built on a little eminence. If you purpose to anchor at this place, take for your guide two other (r) little hills, near each other, and not far from the shore. The Northernmost is the lowest. As soon as you see the fort between these two, steer right for them, into 4 or 5 fathoms, but come nothing to the Southward of these hills, for fear of danger: and observe, that standing towards the fort, the bottom is very foul in 15 or 16 fathoms, but tolerably good from 6 to 4. Calitura.

It is reckoned about 2 leagues from Calitura to Barbarin island. You sail along shore in 7 or 8 fathoms. To the Southward of Calitura is a rock 12 or 13 feet under water; it bears SW $\frac{1}{2}$ S. off the fort, and SEbE $\frac{1}{2}$ E. (s) off the little hill of Makvenien (t). The passage is good, in 4 fathoms, between the shore and this rock, which is about 2 miles wide; but it is better to go without, coming no nearer than six fathoms. Between Mackvenien and Barberin the bottom is foul in 15 fathoms, and tolerable from 15 to 20; but above 20 it is very bad, rock and coral, so that in sounding scarce a grain of sand will come up with the lead. Barberin Island.

Barberin is an island, known by its small distance from the main (u). You may anchor to the Northward of it in 6 or 7 fathoms: there is also a little bay for barks, or longboats. Care must be taken in rounding the Western point, where there are several rocks. The anchorage of this bay is in 2 or 3 fathoms, sandy ground, a small musket-shot off shore.

From Barberin island to the point of Cocacheire, the course is SSE. 4 leagues. Between the two, about 2 miles from Barberin island, runs the river Alican, or Beneto; to the Southward of which is a little fort, upon an eminence. The anchorage is good, in 12 or 13 fathoms, black sand. To the Northward of this river are two rocks, plain to be seen. At 4 leagues off, between Barberin and the point of Cocacheire, you have from 28 to 30 fathoms; hard ground. From this last place, you may coast it very near, in 7 or 8 fathoms; but, at 4 leagues distance, 100 fathoms are not enough, sometimes, to reach the bottom. Point of Cocacheire.

From Point Cocacheire to Ragamma, the course is SE. and the distance 5 leagues. Between the two is a little river or brook, in which boats can scarcely enter: to the Southward thereof is a little red hill, steep to seaward; and about a musket-shot to the Northward, a garden of cocoa-trees, called Amlamgoda: from thence to Ragamma, it is reckoned 3 leagues. Four miles to the Southward of Amlamgoda, a reef runs out for about 2 miles, upon which the sea continually breaks. You must come no nearer in this part, than 20 fathoms: at 15, the soundings are irregular, and very foul to 9, 8, and 7, where it is, in some places, sandy, but not very clean; so that prudence requires, that those, who sail along this coast, should not come under 20 fathoms. Ragamma advances like a point into the sea; there are upon it some clusters of cocoa-trees; and, on the edge of the shore, some large high rocks, by which it may easily be known. Ragama.

From Ragamma to Point de Gala (x), the distance is 4 leagues SEbE. In coasting it, you must not come under 25 fathoms; for a good league to the Southward of Ragamma lies a rock, having only 12 or 14 feet water, and 15 or 16 fathoms all round it. Look out for a little reddish hill, on the edge of the coast; the rock of Gendore (y) being over-against it. Point de Gala, or Gaula.

To the Southward of Grandere (y) are also two rocks under water; about a cable's length, without which, you have 15 or 16 fathoms. These rocks may be easily known; for, as they are but 5 or 6 feet under water, the sea breaks over them continually. Boats or small vessels may pass between these rocks and the shore, in 9 or 10 fathoms; but it is better to go near the rocks

(r) Besides that the fort is built upon. (s) More likely SWbW. half W. (t) Or Makvene. (u) Zeloan. (x) Or Gaula.

(y) I take both these to mean the same place. De Lille has it Gindre; and in a large Dutch MS. chart, I have by me, it is Gundere.

rocks than the shore, because the soundings are irregular, and increase or diminish 2 or 3 fathoms at a cast; yet you never have less than 4 or 5 fathoms.

Point de
Gale or
Gaula.

Within point Gaula is a bay: the Dutch have there a considerable settlement, well fortified, with a good garrison. They do not suffer any strange ship to enter, without sending them one of their pilots, in order to preserve the knowledge of the pilotage thereof to themselves. There is nothing to be remarked, concerning this place, unless to come no nearer it than 16 or 18 fathoms, the flag-staff bearing NNE. if you would anchor in good ground.

Before the bay lie 2 rocks under water, one whereof is covered with 15 feet, and the other with 17; they have round them 10 or 11 fathoms. If you come no nearer than 15 fathoms you run no danger of foul ground. On the East side of the bay is seen a rock, on which the sea breaks.

Point Gaula is in 6° North latitude, and $77^{\circ} 57'$ East longitude from Paris.

Red Bay.

From Point Gaula to Red Bay is $5\frac{1}{2}$ leagues, the coast trenching EbS.

(2) About a league to the Westward of this bay is seen a little island, planted with cocoa-trees, and called Woody Island. In sailing from the Westward, to enter Red Bay, you must coast it 12 or 14 fathoms, till you have doubled a red steep point, which makes the entrance of it; then you discover a reef, very near shore, by which you must sail, in the depth above-mentioned, till you perceive, on the West side of the bay, a little island near shore, and a rock within the reef. You must keep on to the Eastward, till you bring the rock and the island in one. When they bear N. and NbW. you must near the rock, to within a stone's-throw; and having passed it, a cable's-length, anchor in $4\frac{1}{2}$ or 5 fathoms; but, two cables-length from it, you stand a chance of running into very foul ground.

Before you steer with the rock and island in one, bring them to bear NNW. to round the reef, because at the point of the reef lies a rock under water, which hath but 11 or 12 feet. This caution is absolutely necessary to prevent being lost here.

To the Eastward of this bay are high lands, and a little village, called Maitre; but it is impossible to come near this coast, on account of a ledge of rocks, which surround almost three parts of the bay.

To go out of the bay, you must steer contrary to the instructions given you to enter it; and, when you have got again into 14 fathoms, you may proceed as you please keeping the lead going, and a good look-out.

River of
Matura.

From Red Point to Matura the distance is about 3 leagues, EbS. $\frac{1}{2}$ S. Matura is a river, at the mouth of which are 2 or 3 rocks; about a gun-shot to the Eastward, you see a little island near the main, like Woody Island above-mentioned. Athwart this bay (a), there is a reef or ledge of rocks, stretching out from the Western shore, for about 2 miles; so that to anchor before the river Matura, you must come no nearer than 12 fathoms, till the island bears NbE. and NNE. then you may stand towards this island, in a small ship, as near as you please; or you may anchor within the ledge of rocks, opposite the river, in $4\frac{1}{2}$ fathoms; but you must first round the reef as aforesaid.

Dondre-
head.

From Matura river to Dondrehead is reckoned 4 miles SE. There is a ledge of rocks run out about a mile SW. from the West part of Dondrehead, upon which there is but 9, 10, and 12 feet water. On the outer side, are 6 or 8 fathoms, and within, towards the shore, 3 or 4; therefore great care must be taken in approaching them. Being off Matura, in 12 fathoms, if you steer EbS. $\frac{1}{2}$ S. you pass Dondrehead, at 2 miles distance, in 15, 16, and 18 fathoms. This point is low, whereon is a pretty large cluster of cocoa-trees, which makes it easily known.

Bay of
Gaelies.

From Dondrehead to Gaelies the course is $E 3^{\circ} S.$ 1 league. The point of Gaelies is high and steep; so that to anchor, within it, you must round it, within half a musket-shot of the shore.

(2) The chart of the English Pilot, and several others, represent them bearing off each other East and West; but the instruction take it EbS. and WbN. The author has experienced this last position to be the truest. (a) Or river.

shore; otherwise it is exceeding difficult to enter, and to come to without danger of losing your anchor: So that you will do well to keep as close to it as you can. The danger, however great, is visible.

Gaelies is a little round bay, which lies to the Westward. Ships may safely anchor here in 4 or 5 fathoms, mud. They are here sheltered from the Westerly, Northerly and Southerly winds; but the Easterly winds raise a small swell.

From Gaelies to Dickwell the coast lies ENE. $2\frac{1}{2}$ leagues. Bamberand is between the two; and between this last and Dickwell lies a ledge of rocks, near 2 miles from shore, on which the sea often breaks: Wherefore you must come no nearer than 15 fathoms.

Dickwell is known by an orchard of cocoa-trees, which seems to be two miles in length: Dickwell. There is also, between the ledge of rocks above-mentioned and the shore, a reef about a musket-shot off shore.

From Dickwell to Nielwell is reckoned 2 leagues ENE. You may coast it in 12 or 14 fathoms, within a cannon-shot of the shore.

Nielwell is a bay, the West part of which affords shelter from the SSW. and West winds. On its Western point there is a little hill, which in sailing along that coast (b), looks very much like a little island, covered with cocoa-trees. You must pass as near it as that of Gaelies, in 12 or 14 fathoms. Off the East point lies a rock above water. In the bay you need fear no danger, except 3 flat rocks near the shore, and over which it is said the largest ships may pass. It may not be unnecessary, however, to enquire into that by sounding. Bay of Nielwell.

From Nielwell to Coenacker, or the bay of Kerketoos, is reckoned 2 miles ENE $\frac{1}{2}$ E. It is a large bay. You must keep near shore as above mentioned, in 12 or 14 fathoms. Exactly in the middle of this bay you perceive a large rock, and to the Westward a small steep point, like that of Gaelies, near which you must sail to get into the bay. Bay of Coenacker.

From Coenacker to Tangal is 2 leagues, ENE $\frac{1}{2}$ E. It is a point, under which is a little bay. You may keep along this coast in 12 or 14 fathoms. Tangal Point.

From Tangal to Waelue is reckoned 4 leagues, ENE $\frac{1}{2}$ E. The land between the two is low and sandy on the coast, high and steep within land. You may coast it 4 miles off shore, in 20 or 22 fathoms. The bottom is sand mixed, with coral. Waelue River.

Waelue is a large river, which has to the Northward a little mountain. Opposite its mouth, about 4 miles off shore, there lies a rock, on which the sea generally breaks. You may pass within it, in 7 or 8 fathoms, sandy ground.

From Waelue to Mago the course is ENE. Northerly. Mago is a point surrounded with rocks. Half-way between them the bottom grows foul; wherefore you should keep in 22 or 24 fathoms. You may see, between Waelue and Mago, the Salt-houses of Mazen. This is a little bay, wherein nothing but boats can enter. It is said, that there is a rock within this bay; but I am not able to give any description thereof. Mago Point.

The English Pilot, whom I follow in this part, says, that to the Eastward of Mago, about 8 miles off shore, lies a rock above water. I imagine in this he confounds some rocks of the Great Baffles, which are nearer shore than others. Many persons, who have passed near this reef, have assured me, that this is the only foundation for this paragraph; however, those who make this coast should be upon their guard.

From Mago to a little remarkable hill, called the Elephant, which is near the shore, it is reckoned 6 leagues. The bearings NE. and SW. To the S $\frac{1}{2}$ E. of the Elephant you find the Great Baffles: This is a ledge of rocks, on which, according to the natives of the country, there was formerly a pagoda of brass: Wherefore the inhabitants to this day call it Crown-cotte in their language. Elephant.

The Great Baffles extend about a cannon-shot in length, and the same in breadth. The sea breaks here very high, and some of these rocks shew themselves above water. You must give them Great Baffles.

(b) i. e. Coming from the Westward.

them a good birth, and come no nearer than 30 fathoms; it lies 3 leagues off shore, and you may sail within it, by keeping a little nearer the land in 8, 9, 10 and 12 fathoms: Nevertheless you must come no nearer the shore than 8 fathoms, nor the Great Baffles than 12; this is to be observed till the Elephant bears NNW. when, if you are mid-channel, steer ENE. or if you are nearer land, EbN. till you get into 30 fathoms: then steer NE. to sail without the Little Baffles.

I know not what authority the English Pilot hath for saying, that to sail from Dondrehead, to go clear of the Great Baffles, it is necessary to steer ESE. According to this course you would sail indeed very wide of it; but, if I mistake not, there would be great danger of being drove off the coast, and much difficulty to regain Zeloan; because, during the Westerly monsoons, the currents set strong to the Eastward in this part, as I have often experienced. It is true, that in shaping your course by night, you must beware of the currents, which set in shore as well as to the Eastward; for my part, I think it sufficient, being 2 leagues South of Dondrehead, to steer East (c). This course will carry you 8 leagues South of the Great Baffles; which I take to be sufficient for the set of the currents to the Northward: However, you should take care to sound from time to time.

You must still observe, that though it is 20 leagues from Dondrehead to the Great Baffles, yet, when you reckon you have sailed 15, you will be opposite to it; several ships have even thought they had got no farther than 12. This observation is worth attending to, as well for shaping your course as for the distance.

Little
Baffles.

The course from the Great to the Little Baffles is NE. and the distance 7 leagues. The English Pilot makes it NEbN. but from what I could observe every time I made this track, in steering NE. you sail no farther from one than the other. When this reef does not break, the best mark to know whether you are near the Little Baffles, is a little hill on the shore, on which is a rock, resembling a chimney: This hill lies directly NW. of the Little Baffles. A little to the Northward, you see another hill not so high, with a small rock on the top of it, like a pagoda, from whence it derives its name. It is farther inland than that of the chimney, and is not to be distinguished from the other little hills but by this mark.

Between the two Baffles, about equal distance from one to the other, there is a small bank, on which is found but 8 fathoms; but those who sail here need not fear to approach it.

Julius
Nave.

From the Elephant to the high sandy point, called Julius Nave, is about 5 leagues NEbE. between them are two reefs, one near shore, and the other 2 miles off shore, upon which are but 7 or 8 feet water. Within this sandy point is good anchoring ground.

This point of Julius Nave lies NNW. of the little Baffles. You may sail between them in 5 fathoms: You have 6 or 7 nearer shore, and $5\frac{1}{2}$ mid-channel.

Point of
Low Bank.

From the point of Julius Nave (d) to that of Low Bank, or Sandy Point, the course is NEbN. Northerly 16 miles: From this point a sandy bank extends 4 miles into the sea; so that you must take care to keep wide of it, whether in sailing from the Baffles, or the Northward. Between the two sandy points, that is to say, between Julius Nave and this point, the anchorage is good in 12 or 13 fathoms.

From beco

(c) Mr Nichelson is of opinion, that a ship, being 2 or 3 leagues off Dondrehead, may safely steer EbN. which will carry her 4 or 5 leagues without the Great Baffles; for that the currents are very changeable: I much question, therefore, whether they are not regular tides; or, if currents, I hope a competent knowledge of their shifting may be in time procured, which will be the navigator's sure guide in the night. In the day, observation may be made by the land, and the course steered accordingly. See Nichelson's Rem. and Obs. p. 38, 39.

(d) From the point of Julius Nave to that of Pedra, I have corrected several courses, distances and latitudes of the English Pilot, inserted in the Directions joined to it. For greater exactness, I not only had recourse to my particular observations, but I consulted farther the memoirs and remarks of several navigators. The first error I discovered consists in the distance from Point Julius Nave to Batacalo, which the English Directions fixes at 32 leagues; instead of which it can but be 25 or 26, according to the bearings and differences of latitude.

Secondly, Trinqueale is placed at least 10' more Northerly than it should be: I have compared several observations made thereabouts and most of them East of the fort, and it is my opinion it cannot at most exceed $8^{\circ} 35' N$.

From the Low-bank-point to Aganis the course is NNE. distance 16 miles. Aganis is known by a little peek that is near it, like a tower: To the Northward of this peek there are two little hills near each other, and close to the shore a cluster of cocoa-trees, by which Aganis is known. In coming from Low-bank-point you coast it, at 5 or 6 miles distance, in 25 fathoms, sand mixed with coral. You have 15 fathoms within a gun-shot of the shore, which is bold.

From Aganis to Aregam (*d*) the coast inclines NbE. 4 leagues: This place is distinguished by two little hills inland, at a small distance from one another, and also hath a cluster of cocoa-trees, but not quite so large as that of Aganis. They coast it in 22 or 24 fathoms.

From Aregam to Poawegam (*f*) is reckoned $4\frac{1}{2}$ leagues NbE. It is known by a grove of cocoa-trees, which inclose a pagoda: The land to seaward is low; inland it is high and mountainous. There is a reef about a mile off shore: You must in this part keep in 22 fathoms, though it is not very good for anchoring, on account of rocks scattered about in several places.

The direction of the coast between Poawegam and Batacalo is NbW. distance 8 leagues. To seaward, between the two, the land is low, and up in the country are some very high mountains, one of which is called by the navigators the Capuchin, on account of its resembling at its extremity a friar's hood; but it makes only in this form while it bears from the West to the South, for when it bears NW. or NNW. its peek is like the top of a great pyramid.

Two leagues off Batacalo there is a reef of rocks, on which there are uneven soundings: A small ship may sail between the land and the reef, but it is better to keep without. When the Capuchin bears SW. you may edge in towards shore, and anchor over against the river, a mile off shore, in 7 or 8 fathoms. Several cocoa-trees dispersed along shore facilitate the knowledge of this part; besides that, the land trenches from thence NWbN.

It is necessary to observe, that no regard should be paid to the irregular soundings in this part, East of the Island of Zeloan. There are holes in several places. I have experienced, every time I sailed this way, that from 20 fathoms I have suddenly had 100. It will happen sometimes that being near shore, in 7 or 8 fathoms, you shall presently find yourselves in 40. Those who coast this island ought to observe this; as also the currents which sometimes set in shore.

From Batacalo to Vendeloos the course is NWbN. Vendeloos is a bay, on the North side of a point; it may be known by a small hillock, a little way inland, called the Sugar-loaf, to the Southward of which, at some distance, are two or three other little hillocks. At a gun-shot from the coast the depth is 8 or 9 fathoms, but very foul ground in several places; so that you must anchor further off. The ships that have business at Point Pedra should from Batacalo keep near shore; otherwise they risque their being able to fetch in.

From Vendeloos to the Island Provedien is about 3 leagues NWbN. between these two the coast forms a bight. Here is exceeding foul ground. You must keep an offing of $2\frac{1}{2}$ leagues, in 16 or 18 fathoms.

The Island Provedien is a white rock, like the sail of one of the country vessels. The ground continues foul for 5 leagues more to the Northward.

From the Island Provedien to the point of Cotiaris (*g*) the course is NWbN. distance 9 leagues.

Cotiaris point is low and even. About 2 or 3 leagues to the Southward of it the anchorage becomes better, but this not above two miles off shore, in 10 or 12 fathoms. From this point to about

Thirdly, The same author is again mistaken in the latitude of Point Pedra, which ought to be in $9^{\circ} 42' N.$ and not in $10^{\circ} 02'$. Besides many particular memoirs to authorize what I have here advanced, the Journal of the Sieur Liebault, pilot of the French company's ships, serves to prove it: His capacity and accuracy are sufficiently known to depend on his remarks. In 1730, lying E. off this point, in the ship Lys, he made by observation $9^{\circ} 41'$.

The error is farther confirmed, by comparing its distance and situation with any other place: Among the rest, for example, Kary-Kal, whose latitude I observed and placed in my new charts in $10^{\circ} 45'$. From this place to Negapatnam is 13 miles, and from Negapatnam to the Pagoda Canimere 22 miles; these two distances being from North to South, the latitude of this Pagoda may be concluded to be $10^{\circ} 10'$. Thence to Pedra point the course is $SE\frac{1}{2}S.$ distance 12 leagues, which gives $28'$ for the difference of latitude, which being taken from $10^{\circ} 10'$ there will remain $9^{\circ} 42'$ for the latitude of Point Pedra. It is evident then either way, that the English pilot places this extremity of the island Ceylan $28'$ more North than it should be.

(*e*) Arregamme, or Arrewegamme.

(*f*) Poawegamme, or Tricule.

(*g*) O. Coetier.

Aganis.

Aregam.

Poawegam.

Batacalo.

Remarks on the unequal depths found East of the Island Zeloan. Bay of Vendeloos.

Island Provedien.

Cotiaris Point.

Bay of
Trinquem-
male.

Island of
Pigeons.

Rio Carty
River.

Mole-
wall.

Point
Pedra.

about the middle of the bay you find good anchorage from 20 to 24 fathoms, but more towards Trinquemale, it is too deep to anchor in.

From Cotiaris to Trinquemale bay (*b*) is about 3 leagues NW. The bay is large and deep, extending about 2 leagues: It has on the North side high land, and some good harbours, sheltered from all winds. The entrance of this bay is very clear, and without danger, though very deep. On the North side are two rivers, and three towards the South. Trinquemale fort is in $8^{\circ} 35' N$.

From the entrance of Trinquemale bay to Pigeon Island, the course is NW. 4 leagues. There is no anchorage between the two, on account of the great depth.

From Pigeon Island to Cross river is 4 miles.

From Cross river to Rio-Carty (*i*) the course is NW. distance about 4 leagues. The coast is low and even. You may anchor 4 miles off shore, in 16, 18 or 20 fathoms.

From Rio-Carty to Molewall (*k*) the distance is $5\frac{1}{2}$ leagues NW. You may anchor between the two, there being very good ground. From Molewall there is a bank runs out 3 leagues; come no nearer it than 9 or 10 fathoms: But, as it is very shoal, to avoid it, you had better keep 4 leagues off shore, where you have 10 or 12 fathoms, coral. When you are almost past this reef, the soundings are sand and shells, mixed with gravel and coral; and 5 leagues off shore, sand with a few shells. This bank being doubled, you must, to go to Pedra Point, hawl in for the coast where there is nothing to fear. So long as you continue in 6 fathoms, sandy ground, you are still on the edge of the bank; if the bottom is oaze, you may keep within gun-shot of the shore, in 7 or 8 fathoms, the same ground; but you must keep a little off as you near Pedra point, because of the dangers that surround it.

From Molewall to Pedra point, is reckoned 14 leagues NW. and NWbN. You may coast it, as I observed in the preceding paragraph, without sailing farther off it, in order to shun a rock under water, which hath but 9 feet, and a bank which lies off the coast, on which are very unequal soundings. The rock bears from Point Pedra EbN. $2\frac{1}{2}$ or 3 leagues.

In sailing from the Southward, if you meet with contrary winds, so that you cannot coast it at the above distance, you had better sail without the bank and rock: Keep 4 leagues offing, in 9 or 10 fathoms, till Point Pedra bears WSW, then stand to the Westward, but nothing to the Southward, till this point bears SW. otherwise you have unequal soundings, which decrease sometimes 2 fathoms at a cast; instead of which you will find no less than $4\frac{1}{2}$ or 5 by conforming to this direction: However, if by neglect thereof you find yourself in 4 fathoms, sand and rocks, you must then hawl off, till the soundings are sand, mixed with coral and shells, in $5\frac{1}{2}$ or 6 fathoms.

When Pedra point bears SbE. $4\frac{1}{2}$ leagues off shore, you may anchor there in $4\frac{1}{2}$ fathoms, fine sand: But, if you would approach the coast, and you are obliged to turn it, in standing off, take care not to bring the point to the Westward of SW. nor standing on, more Southerly than SSW. By this means you escape the danger.

The North part of Point Pedra is known by a church and some houses built upon it; the land trenching to the Westward.

I have, after many observations made at sea with great exactness, determined the latitude of this extremity of the Island Zeloan, in $9^{\circ} 42' N$. (*l*), contrary to the English Pilot, who places it 20' more North than it should be.

It is reckoned 8 leagues WbW. and WSW. from Point Pedra to the point NW. of Arnedien (*m*), called the Fort of Hammon-Hiel. About 6 leagues from Pedra point you may see the NE. point of Arnedien. It is proper to keep $3\frac{1}{2}$ leagues off it, on account of a flat bank, which runs a good way off, on which there is but 3 fathoms; and keep this offing till Hammon-Hiel bears SEbE

(*b*) Or Trinkamalay; called also Crankanela bay. For a more particular Account of this bay, see Nicholson's Rem. & Obs. p. 61—66. (*i*) Or Rio de Sorto. (*k*) Moelwale or Passake. (*l*) Mr Nicholson makes its latitude $9^{\circ} 48' N$.

(*m*) I take this to be the same with what is named Cardies, in the chart of the English Pilot. Indeed, the NW. part of Zeloan is variously laid down and named in the maps and charts.

SEbE. and Cow Island (n) SbW. and SSW. you must then steer by it (o) 'till you get into 4½ fathoms, good ground, and bring the fort of Hammon-Hiel to bear EbS.

In the months of May, June and July, tho' the wind blows violently from the SSW. yet here are strong tides both of flood and ebb; so that, even then, you may turn it up.

I shall finish here the Direction for the coast of the Island Zeloan, without speaking further of the NW. part thereof. The great difference between the draughts I have met with, which pass for the best, and the directions of the English Pilot, which are the only ones yet extant, have obliged me to neglect it: Besides, this part of the Island is only frequented by very small Dutch vessels; and on this account I thought it immaterial to my design.

DIRECTIONS for sailing on the Coast of COROMANDEL,
GOLCONDA and ORIXA.

I SHALL begin this chapter with a treatise on the winds and currents, which prevail along this coast, and the bay of Bengal, every month in the year. The publick are indebted for this memoir, and the greatest part of this instruction, to the Sieur de la Touche, formerly master attendant of the port of Pondicherry: His frequent voyages to Bengal and Mergui enabled him to give the following account of it; and to the praise of this skilful navigator be it spoken, that for above 25 years experience in the Eastern seas, he never omitted any remark that might be of service towards perfecting the navigation thereof.

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Of the MONSOONS on the Coast of COROMANDEL,  
and other Places in the Bay of BENGAL.

WESTERN MONSOON.

DURING the Month of March, on the coast of Coromandel, the weather is generally March.  
very mild, the sky serene, and without storms; or if they happen, are of short duration. After midnight the wind blows from the NW. a little fresh, varying to the SW. and sometimes calm; but when it is a brisk gale it lasts (uninterrupted) 'till 9 or 10 in the morning. After 12 at noon, and seldom before, begins the breeze from the SE. varying to ENE. sometimes even as far as NE. These little shiftings happen particularly when the February moon continues long in March.

Off in the bay the winds vary from the SW. to S. and from E. to NE. the currents change in the same manner; but they are more subject to set Northward, because the Southerly winds are most frequent. It is nearly the same along the coast.

In the months of April and May are the strongest currents; when they set N. and NE. In April and May.  
these months also are the freshest breezes from the SSE. It is seldom calm in April; but when the March moon is late, and before some gale of wind, or the return of the Northern monsoon.

On the coast of Coromandel, this return of the monsoon makes the April moon dangerous; but it does not always bring settled storms, only some squalls and rain, that hold on and off two or three days. In this uncertainty, you had better, during this moon, sail 2 or 3 leagues off shore, in 15 or 16 fathoms, to avoid all danger. This admonition relates only to this coast; for, in the bottom of the bay, the gales of wind and storms are much more frequent.

The

(n) This is called Ilho de Sorto, in the English Pilot.

(o) That is, Cow Island.



The regular breezes above mentioned, that blow from the SSE. commonly begin at 9 or 10 o'clock in the morning, and continue till 9 or 10 at night, and sometimes all night: In the morning (p) the winds blow from the SSW. and SW. When they are fresh, the SSE. breeze is strong.

In some years, about the end of April, the Westerly winds blow for two or three days.

The sky is generally clear, except sometimes in the evening it is cloudy in the Western board, and accompanied with lightning. When it blows fresh in the day time, the horizon is somewhat obscured to the Eastward. In the month of May the weather is more settled. In the morning the land breezes from the SW. to W. are generally pretty fresh: When they are very strong they last much longer than in April; which is the reason that the sea-breezes from the SSE. to S. do not begin till afternoon, and end at 9 or 10 at night, as I observed above; and consequently are of shorter duration. This happens mostly towards the end of this month, when it sometimes blows from W. to SW. for three days together, very strong about the middle of the day, but moderate in the morning and evening.

Between the regular land and sea breezes it is generally calm; when there is none, the breeze is strong, and the SW. winds shift to the South, SSE. and SE.

Some years there are in this month squalls of wind, that last an hour or two: They come mostly from the NW. and seldom from the Eastward. When they are attended with rain and thunder, it blows the less.

In the bottom of the bay of Bengal, the months of April and May are dangerous; for besides the hurricanes, which blow violently some years, you generally meet with heavy squalls from the Northward, which last 5 or 6 hours, sometimes longer; and mostly happen every 2 or 3 days.

During these two months, the winds, that blow in the offing, are from the SSW. to SW. and in May WSW.

June,  
July and  
August.

The months of June, July and August, differ but little one from the other; the Western monsoon is then in its height. In the offing, the winds are constant from SW. to W. especially in June and July; but, at the end of August, they frequently blow from WNW. and sometimes NW. On the coast of Coromandel, the land winds are not constant; but you commonly have the sea breeze from S. to SE.

The W. and SW. winds, during these three months, are sultry hot, and even insupportable; but more so some years than others: They sometimes blow with such violence, that they darken the air with the dust and sand they raise from the shore; and these clouds of dust reach a great way off at sea: This happens mostly in dry seasons; but when the squalls are more frequent, the rains prevent this effect of the wind; which is commonly experienced about the end of June, and in July, rather than in August, when the squalls and rains are more frequent.

When the Westerly winds blow their hardest, the sea is smooth along shore, especially at Pondicherry: Then the country vessels pass the bar easily; which, at all other times, breaks very much; and sometimes not passable.

Although it is pretty fine weather, at this time of the year, on the coast of Coromandel, it rains abundantly in the bottom of the bay, at Ballasore, Chatigan, Arrakan, and on the coast of Pegu, Siam, and other places in the East.

The SW. winds blow very strong, at this season, in Ballasore road; so that the pilots for the Ganges cannot get aboard the ships. Here especially you ought to be well provided with good anchors and cables.

Septem-  
ber.

The month of September, though inconstant, is more subject to Westerly winds than to any other: They vary from SW. to North. The day breezes blow sometimes from NE. but oftner from SE. and SSE. In general, from whatever quarter it blows, it is very moderate, except a few squalls.

(p) Before the SSE. breezes begin.



In the bottom of the bay, you have little wind from the middle of August to September; but abundance of rain.

The currents, which all this monsoon set with the winds to the NE. slacken in September; and, on the coast of Gergelin, about 8 days before the Equinox, they make to the Southward; and are rapid at the end of the month: This is a great help to such ships as sail, at this time, from Bengal for the coast of Coromandel, or other parts.

Almost every year, soon after the Equinox of September, you have strong Easterly winds in the bottom of this bay, on the coast of Orixa, and at Ballasore; whereas, in the middle of the gulf, the winds commonly blow from the NW.

### EASTERN MONSOON.

On the coast of Coromandel, the month of October is the most inconstant in the year. The winds there are then exceeding changeable, frequent calms, rains and fair weather. The NE. monsoon is not perceivable till the end of this month; nor is it certain then. At the change of the SW. monsoon, the winds vary; when towards the SE. they are pretty fresh; but when towards the NW. they are weak, and frequent calms. Sometimes in the morning it will blow fresh from the Eastern board, and sometimes, for 3 or 4 days, the winds, in the morning, blow from NNW. and, in the afternoon, from NE. October.

A variety of squalls, rain, and dark clouds, that obscure the horizon, seem to presage violent storms; which however seldom happen. It is on this account, that all the ships leave this coast about the 20th of this month; either to winter on the Eastern coast of the bay, or for any other destination.

At Bengal, the rains are commonly over by the 10th or 20th; but the Ganges continues to overflow till the end of this month, which is more subject to storms and tempests than on the coast of Coromandel; though there it often blows very fresh from NE. to E. wherefore the ships that depart late (at the end of September, for instance) from the coast of Coromandel for Bengal, should keep out at sea, or they run great risque of being lost on the coast of Orixa.

How far soever the month of November may be advanced, in the NE. monsoon; yet you have, during its continuance, variety of winds; though mostly from NNE. or rather in the morning from NW. and NNW. and in the afternoon from NNE. and NE. but sometimes from the SE. and SW. for 3 or 4 days. The former part of this month is subject to calms for several days, and commonly followed with storms, which happen more at this, than any other time of the year. They are so violent, that no ship can possibly ride at anchor. They generally begin from the NW. and thence chop successively from N. to NE. ENE. and East. The sea then rises so prodigiously, that you see it foam a league off. When these tempestuous winds shift from East to South they moderate, and the sky grows clear; but if after having blown violently from NE. a calm ensues, presently it blows hard from the SW. November.

Some years, these hurricanes have not happened, or they have not been so violent, so that a ship might ride safe in the roads; but as this is so precarious, it is better not to tarry on the coast.

Out in the bay, the winds blow, in November, from NNE. to ENE.

In December and January, the Monsoon is regular from NNE. to ENE. On the coast, the winds in the morning generally blow from NW. and NNW. and about noon it begins to blow from NNE. to ENE. It commonly rains if the winds vary but from NNW. to N. as does sometimes when from the NE. but then it blows very hard, for 2 or 3 days, and the sea runs so high, that no vessel can go over the bar: Notwithstanding this bad weather, whereby the ships in the road suffer, they may ride it out, if they have good cables and anchors. Some years, the winds are nearly alike, at the full and change in December and January, and the same in the middle of February, when the January moon is late; but in general they are not December and January.



not so strong in January and February, as in December; and it has been remarked, that there have been more years, wherein these months are fine, than the contrary. In January and February, the weather is mostly fair and moderate, especially when it has been bad weather in November, or the beginning of December. As for the currents, they follow the direction and force of the wind.

February.

The month of February is a continuation of the NE. monsoon; when it grows weak, the Southerly winds opposing it, especially after the 15th. Some years, these winds set in sooner, on the coast, than others.

The ships that sail for Europe at this time, have often met these Southerly winds, and have been obstructed by the currents, which set with the winds; but they are easily relieved by the first Northerly or Easterly winds; especially, if they are far off shore, where the monsoon always lasts longer.

The Northerly winds continue, some years, 'till March; but seldom without a revolution from the Southward. On the coast, the NW. winds blow in the morning; and, now and then, the SE. breezes: in the afternoon, the weather is always mild and moderate, whatever wind blows (q).

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### *A Description of the Coasts from POINT PEDRO, in the Island CEYLAN, or ZELOAN, to the Mouth of the GANGES.*

Canimere

FROM Point Pedro, the Northernmost part of the Island Zeloan, to the Pagoda of Canimere, the first point of the Coromandel coast, the course is NW $\frac{1}{2}$ N. distance 13 or 14 leagues; the depth, in this track, 9 or 10 fathoms. On approaching this point it decreases to 5 fathoms: come no nearer; because of a bank that projects 1 $\frac{1}{2}$  league (r) from Point Canimere.

An important observation.

The ships, that after coasting the Island Zeloan, by way of Molewall, cross from Pedro point to the coast of Coromandel, almost always make the land sooner than they reckon; because the currents set to the NNW. (s) very strong, and carry them into the bay NW. of Zeloan; so that many navigators, who, to get sight of the coast, have directed their course to the Northward of Trankabar, have made the land to the Southward of Negapatnam. Several have ran ashore on this coast, in the night-time, for want of having the prudence to sound: But navigators should not neglect such salutary counsel. Not but that the contrary hath happened to some; that is to say, they have been set to the Eastward; but these examples are rare, and the first very common.

The Pagoda of Canimere may be seen 5 or 6 leagues in clear weather. About  $\frac{1}{4}$  of a mile to the Northward is a little river, and on its bank a large village, encompassed with trees, where a trade is carried on in Tobacco and Rice. The mouth of this river doth not appear at a distance: its bar hath but 3 feet water; so that only very small vessels can go into it. They anchor about a league from its entrance, with the Pagoda of Canimere SWbW. The ground to the Northward is very soft mud, and consequently not fit to anchor in.

Negapatnam.

From Canimere to Negapatnam the course is North, distance 7 $\frac{1}{2}$  leagues. Between the two is seen a thick wood, with little bushes without number. There is nothing else remarkable but a church, about a league to the Southward of Negapatnam: It is built beside a little river, which is not seen in coasting; and as there is not above 4 feet on the bar, at high water, I shall take no further notice of it.

Negapatnam

(q) It may not be amiss to compare this whole account of the Monsoons with Mr Nicholson's Remarks and Observations thereof page 52—55. (r) It is more than 2 leagues in the chart. (s) This must be a mistake, and means SSW. by the consequence.



Negapatnam is one of the most considerable places belonging to the Dutch, on the coast of Coromandel: Its fortifications are good. The town lies to the Northward of the fort, to the Southward of which is the mouth of a very commodious river, capable of receiving middling vessels. To the Northward of the town is a great pagoda, called the Chinese Pagoda, on which is erected a mast or flag-staff. You anchor before Negapatnam in 5 or 6 fathoms. The bottom athwart it is very level, so that at 4 leagues distance you find but 6 or 7 fathoms.

From Negapatnam to the river Karey-Kal, is about  $4\frac{1}{2}$  leagues, the course  $N5^{\circ}W$ . In coasting you keep in 6 or 7 fathoms. Between the two runs the river Naour, wherein a trade is carried on in chints and rice. The mosque with 4 white pyramids, which may be seen a great distance at sea, renders this place remarkable.

River of  
Karey-  
Kal.

Karey-Kal is a new settlement of the French (*n*), not only considerable by the great number of Aldees, who are dependants, but also by the linen trade. Two rivers bend their course through this grant: they take their rise among the hills (*o*) on the coast of Malabar, and thereby facilitate the carriage of the merchandize, and render the country fertile, which abounds in rice and other necessaries.

The fort of Karey-Kal is built on the North side of the river, whose mouth is formed by a narrow point of sand, which extends along the coast, so that its entrance being parallel with the shore cannot be distinguished far off. The other river named Tiroumala (*p*) is a quarter of a league to the Southward, and opens likewise towards the North; as indeed do almost all the rivers on this coast.

The bar which shuts up these two rivers hinders middling ships from entering, so that only boats can pass it: and then it must be at high water. They anchor before Karey-Kal in 5 or 6 fathoms. The marks for anchoring depend upon the monsoon in which you are there, viz. In the Southerly monsoon, bring the flag-staff to bear WSW. and in the Northerly, West: By this means you facilitate the passage of boats, passing and repassing.

From Karey-Kal to Trankabar the distance is  $1\frac{1}{2}$  league  $N4^{\circ}W$ . You keep along shore, in 6 or 7 fathoms; but in approaching the fort of Trankabar you must keep off a little, on account of a bank near the river. This bank doth not project much, and provided you keep in the above depth you have nothing to fear.

Tranka-  
bar.

Trankabar is the chief settlement belonging to the Danes in India; the town is very neat, and the fort remarkable by its exceeding whiteness, which they take care to keep so. The Indians call this place Tirangampadou, whence is corruptly derived the name of Trankabar.

Two leagues and a half to the Northward of Trankabar is Cabripatnam, appearing like a fort of fort, without bastions; just by are two small pagodas, very near each other, inland. There was formerly about half a league from this place a small French factory.

Cabripa-  
nam. or  
Kaweri-  
patnam.  
River of  
Trimini-  
vas.

The little river of Triminivas (*q*) is 2 leagues North of Cabripatnam. It takes its name from a pagoda that is seen inland. Off its mouth there is a bank, about a mile distant; but it is not dangerous, as the depth decreases gradually in approaching it. The land to the Northward of the river is somewhat higher than the rest of the coast, which from the Pagoda of Canimere is not to be seen but by its trees and buildings. In coasting, about a league off shore, you have 9 or 10 fathoms water.

'Tis reckoned about 3 leagues North from the River Triminivas to that of Coloran (*r*). This last discovers itself by thick bushy wood, near the shore, through which one of the mouths of

River of  
Coloran  
or Kolo-  
ran.

(*n*) This, with the places depending on it (the most considerable of which is Teru-maley-zayen, 4 miles to the Southward) was granted to the French, by the king of Tanjour, in 1739.

(*o*) Gatte Mountains.

(*p*) Or Tiru-mala.

(*q*) On which stands the tower of Tiru-mala-wassel.

(*r*) Almost all the Directories for this coast make the distance less from point Coloran to Trankabar than it really is. I have here established a more exact distance, which I have concluded from the difference of latitude of these two places, and their bearings; having observed them both in several voyages. The advice that I give to avoid the bank of Coloran, differs also from the Old Directories, which pretended that you may coast it easily in 9 or 10 fathoms; I have experienced the contrary, having in 11 fathoms seen the rocks within gun-shot of the ship. Mr Nicholson calls this river Davecotta.



of these rivers (s) seems to make a passage; from thence extends a bank, the point of which reaches  $1\frac{1}{2}$  league from the shore. It is steep too, and therefore the more dangerous; so that from 12 fathoms you fall in some places suddenly into 3 or 4: Therefore a large ship that sails along this coast ought to come no nearer than 14 or 15 fathoms. In this track are to be seen, up in the country, four remarkable edifices: These are the four porticos of a famous pagoda, (r) called Chalembarang (u): It bears due East (x) of the opening in the wood above mentioned, and is the more easily found thereby.

The South side of the entrance of Coloran river seems to form a point, especially when you come from the Southward, and sail near it, because the coast, whose direction was hitherto North, forms an elbow, and extends  $3\frac{1}{2}$  leagues to the NNW. as far as Porto-Novo. The land is low and even, and nothing else remarkable but the buildings above mentioned.

Porto-  
Novo.

Porto-Novo is an Indian town of great trade: Here the French and Dutch have factories, or houses for trade, on which they hoist their flags.

As you pass the shoal off Coloran, (y) to go to Porto-Novo, you must bring (z) them to bear NWbW. before you steer by this point of the compass; so that you may be sure you have doubled the North point of this bank.

In July, sooner or later, from Triminivas to Porto-Novo the waters are thick and muddy, as in an inundation; this is the more surprising, as it seldom rains on the coast of Cōromandel at this time of the year. This foul water proceeds from Coloran river, which takes its rise among the mountains of Gatte, on the coast of Malabar, where the frequent rains occasion this inundation, especially at Coloran, at which place is the greatest outlet of this river. Its other principal ones are at Negapatnam, Karey-Kal, Trankabar and Triminivas.

From Porto-Novo to Fort St David, belonging to the English, the course is NbE. distance  $6\frac{1}{2}$  leagues. In sailing along the coast you must keep a league off shore, in 8 or 9 fathoms. Half a league to the Northward of Porto-Novo begin the sand-downs, which extend along the coast; at a distance, this part of the coast resembles several islands, and this proceeds from these sand downs appearing higher than the land behind, which is exceeding low.

Fort St  
David.

Fort St David is situate on the edge of the coast, and  $\frac{1}{4}$  of a league to the Southward you see the town of Goudelours or Koodeleur. There is a small bank lies about  $\frac{1}{4}$  of a league off Fort St David. They anchor in 7 or 8 fathoms.

Pondi-  
cherry.

From Fort St David to Pondicherry, the course is NNE. Easterly, distance 14 miles. At a league off shore you have 8 or 9 fathoms. There is nothing remarkable between them. The land is sandy to sea-ward, and woody inland. In sailing from the Southward you see the town and fort of Pondicherry, at the foot of black land, a little higher than the rest of the coast. This black land, about three leagues in length, is NW. of the town, which, as the fort, is built on low land by the sea-side.

Pondicherry is the chief of the French settlements in the East-Indies; it is the residence of the governor general, and head council. Its situation is in  $11^{\circ} 55'$  North latitude, and  $78^{\circ}$  East longitude from the Royal Observatory at Paris (a). The king of Vaspour granted it to the French, in 1672, in consideration of services done by him M. Martin, who two years afterwards was appointed governor thereof. The prudent conduct of this officer preserved it for his king, in spite of the revolutions that happened in 1677, and some time after in Carnatte or Karnateka, by the invasion of prince Sivagy, who confirmed the grant in 1680.

(s) At the mouth of this river stands the town of Tirukotty, where the English have a fort encompassed by the river.

(r) Mr Nichelson says they are 4 pagodas at a considerable distance from each other, and irregular, which most likely they would not be, if the porticos of one pagoda: furthermore, that our army had been there, and confirmed this. (u) Or Shidam-baram, but most commonly called Chalanbron, according to Mons. D'Anville. See the Geographical Illustration of the Map of India, p. 57. But Mr Nichelson has it Chillambrum. See his Rem. and Obs. p. 45. (x) West rather, if he means the pagodas, as is most likely; unless he means the point of the shoal. (y) Or Calderoon. (z) The French and Dutch flags at Porto-Novo.

(a) By many observations of the immersions and emersions of the first satellite of Jupiter, which have been made at Pondicherry by the Jesuits, and compared with those made by the members of the Academy of Sciences, the difference of meridians between this town and the Royal Observatory at Paris, hath been found 5 hours and 12 min. of time, which is  $78^{\circ}$  deg. of longitude, and agreeable thereto I have placed it in my new Charts.



As soon as the declaration of war between France and Holland was known in India, the Dutch, jealous of this settlement, where the trade daily increased, became resolved to make themselves masters of it; they tried all manner of ways to supply the weakness of their own inability. They engaged the Great Mogul to assist them in the attack, and fearing this ally would not prove sufficient, they sent to Ali-Raja, governor of the province, with many presents to win him to their interests, and promised him a considerable sum for the subsistence of an army which they required of him. This negotiation had at that time no other effect than to induce M. Martin to take proper measures to defend this place, and he doubled his care in 1690 and 91, 'till the English joined the Dutch, and threatened to besiege and raze it to the ground. The Dutch, not dismayed with the bad success of their first attempt, continued their solicitations, and in 1692 obtained a Caoul (b) or recommendatory letter, from Raja-Ram Sacrapatti, king of Gingy, who permitted them to attack the French in Pondicherry with their utmost strength, as well by land as sea, in order to the reduction of that place, with a promise on his part to assist them, at the Dutch company's expence, with a sufficient force of infantry and cavalry for this enterprise.

This prince on his part contracted (after the conquest) to yield them up the fort of Pondicherry, with the lands thereto belonging, to enjoy and possess in the same manner as the French had done; besides all the effects, gold, silver, and other merchandizes that they should find there, with the remittance of all the rights that Raja-Ram could claim therein.

He farther engaged, for himself and his successors, to establish and maintain them in their possession, and to succour them with all his forces against any who should hereafter attempt to molest or disturb them in it.

The Dutch on their part obliged themselves to pay this prince the sum of 21,000 pagodas (c), the currency of Pullicatte, half to be advanced, and the other half on the reduction of the place.

This Caoul was confirmed by another king of Gingy, called Pralada Niragi, of the Bramin's cast. All these negotiations cost the Dutch above 50,000 pagodas.

With this permission they arm for the execution of their design. In 1693 they presented themselves before Pondicherry, with a force capable of attacking the strongest place in the Indies. Their squadron was composed of 19 men of war, several sloops, boats and country vessels, having on board above 1500 regular troops, besides seamen, boughies, macassars and chingalas, to the amount of above 2000; 15 or 20 pieces of brass cannon, eighteen pounders, 24 field pieces, 6 mortars, and war-like stores in abundance. This army was farther increased by that of the king of Gingy. There remains no doubt but that this great preparation was attended with a favourable success, if we consider what was the condition of Pondicherry: All its defence at that time consisted in a brick wall, of an irregular form, 238 fathoms in circumference, which inclosed the magazines and apartments of the principal factors; 4 small bastions, able only to mount 6 guns, flanked the curtains of it. This place was attacked and defended with vigor; but after about a month's siege M. Martin was obliged to surrender it to the besiegers, on honourable terms. It was afterwards restored to the French by the Treaty of Ryswick, and this same governor again took possession of it, in 1699, in the name of the French company, who immediately gave him orders to see it fortified. They sent him M. de Noon, in quality of chief engineer, and from his plans and designs they began in 1701 to build the citadel, which is a regular pentagon of 90 toises or fathoms round the exterior polygon, strongly built with brick, with a ditch full of water 10 fathoms wide, and well covered. The bastions are built with orillons or port-holes in them, and barbets on the flanked angles. The Royal-gate fronts the sea; it is ornamented with a beautiful piece of architecture: In a word, this fort may be considered as the best of its kind in all the Indies: It stands in the middle of the town, by the sea-side, whence the houses extend North and South.

In

(b) This is taken from the original Treaty.

(c) This amounts to about 178,500 French livres.



In 1724, M. de Beauvoillier, who was governor of it, began to inclose the town. Father Lewis, a capuchin, had the management thereof: It consists in a brick wall, flanked with bastions, in the modern way. In 1740 and 41, under the government of M. Dumas, these fortifications were augmented, by the care of M. de Cossigny, an engineer of reputation and merit, on account of the Marattas, who threatened to destroy this town. Their army, assisted by that of several other Gentoo princes, amounted to above 150,000 men: After having conquered the Moors or Moguls, and ravaged all the province of Carnatte, they purposed to treat the Europeans settlements in the same manner, especially Pondicherry, the governor of which had afforded a retreat to the Mogul's viceroy, with his family, and the remains of the army after their defeat. The care that this prudent commander took in putting the place in a condition of defence, the resolute courage wherewith he answered the Maratta generals, the solid arguments he made use of to represent to them the injustice of their pretensions, made this people not only change their purpose, but their chiefs sent him a firaph, or ferrapah (*d*), by an officer of distinction, who assured him from them, that in consideration of the great reputation of the French in India, and out of regard to him in particular, they now would live in friendship with him. This news, so agreeable, and so little expected, restored tranquillity in Pondicherry, which had already prepared for a vigorous defence. This town is now the strongest place in the Indies: It contains 3000 toises or  $1\frac{1}{2}$  league in circumference (*e*). Here is a mint, where they coin rupees (*f*) and pagodas, which are superior in fineness to many others, and are current all over India. This privilege was granted to M. Dumas, in 1736, by a phirmaund or letters patent from Mahomet Scha, emperor of the Moguls. This prince a few years afterwards honoured him, and his successors in the government of Pondicherry, with the dignity of Nabob or Viceroy, and in this quality committed to him the command of a mansab or battalion of 4500 horse, in acknowledgement of the refuge he afforded his subjects in Pondicherry during the incursions of the Marattas in Indostan, as above mentioned. He is the only European on which this high honour had hitherto been conferred.

They anchor in Pondicherry road in 7 or 8 fathoms water, 2 or 3 miles off shore.

Conjimore, or Kottemore.

From Pondicherry to Conjimere the coast runs NNE.  $\frac{1}{2}$  E.  $4\frac{1}{2}$  leagues. Between them are sand-downs, along the coast; and behind, the black land before mentioned gradually decreases, and terminates about a mile to the Southward of Conjimere, which is only remarkable by the ruins of a factory, which the Dutch abandoned, after 3 or 4 years residence: You find also the remains of an old English inclosure abandoned also.

The anchorage is very good opposite this place, in 6, 7 or 8 F. water, about 2 miles off shore.

From Conjimere to Alemparva the course is NEbN. distance 5 leagues. About a league beyond Conjimere you perceive a thick wood and a village; then the coast appears lower, and seems to bend in a little, 'till you come near Alemparva, where the S. side of the river rises in sand-downs, and projects out a little; otherwise this point is not dangerous, and in passing it the depth diminishes but a fathom. The N. side of the river is covered with trees.

Alemparva.

Alemparva is distinguished by a beautiful fort, flanked by many turrets, belonging to the Mogul: Its whiteness renders it conspicuous at a great distance. There are also several hillocks on the land.

Sadras.

From Alemparva to Sadras, a Dutch settlement, is NEbN. distance 7 leagues. The country between them is partly flat, sandy and but few trees, 'till within 3 leagues of Sadras, where

(*d*) A present that consists of a complete dress of silk and gold in the country fashion, being a mark of esteem and friendship to those on whom it is bestowed.

(*e*) It was besieged by Adm. Boscawen in 1749; but he was obliged to raise the siege on account of the monsoons. In 1760, it was blockaded at sea by the Admirals Cornish and Stephens, and Col. Coote by land, and obliged to surrender at discretion; the garrison being short of provisions. This place was afterwards totally demolished, as the French had done by Fort St David's; but was restored to them again by the peace of Paris in 1763.

(*f*) The rupee is worth about 48 French sols, and the pagoda about 8 livres, 5 sols.



where begins a thick wood of palm-trees, extending about a league Northward: Opposite its extremity (g) is a little spit of sand, which runs out  $\frac{1}{4}$  of a league to sea-ward. Two leagues further to the Northward you find Sadras; and at the entrance of a thick wood, the Dutch factory. There are two pagodas, but not very discernable, one to the Southward, and the other to the Northward. Two or three leagues up in the country you see several little hills, called by navigators the Mountains (h) of Sadras: When the highest of these bears NW. Sadras bears West. About 4 miles off shore are 9 or 10 fathoms water.

About 2 leagues NEbN. from Sadras are the Seven Pagodas, which are only to be seen near the shore: There are five upon high and steep rocks within land, the tops of which can only be seen, by reason of a thick wood that hides them; another is so near the shore that the sea washes the foot of it; the seventh hath been destroyed by the sea: It stood on a rock  $\frac{1}{8}$  of a league from the shore (i).

The Seven Pagodas.

From the Seven Pagodas to Couvelan is 16 miles, NbE $\frac{1}{4}$ E. In this passage are some rocks (k), which bear ESE. off the little hill of Tripoulour, remarkable by being much nearer the shore than any of the others. These rocks project about a mile into the sea. You may coast it in 9, 10, or 11 fathoms, about 4 or 5 miles off shore.

Couvelan or Kovelan.

From Couvelan to St Thomas is reckoned 5 leagues, NbE. The town is called by some Malia-pour; it is by the sea-side, and is nothing but a heap of ruins. There are some churches, especially a cathedral, the see of the bishop suffragan to Goa. All the Portuguese churches on the coast of Coromandel are in his diocese.

St Thomas, or Meliapour.

Mount St Thomas lies half a league to the Westward: It is distinguished from many others round it by a church built on the top of it, which is easily seen in sailing along shore.

From St Thomas to Madras is a league NbE. This town is the chief English settlement on the coast of Coromandel, and the seat of a superior governor and council. It is encompassed round with a wall of brick, flanked with bastions and supplied with cannon (l). A little river, whose mouth is to the Southward of the town, and which forms an elbow in running to the Northward, surrounds most part of it. Madras is divided into the white and black town. The first is very small, but well built: The latter lies to the Northward of it, and is the abode of the Gentoo merchants, Moors, Armenians, Jews, &c. and some Europeans, who cannot dwell in the white town. The black town is not quite encompassed with walls like the fort. A number of ships are always seen in the road. The anchorage is about 2 miles off shore, in 10 or 11 fathoms water. There are inland some high mountains. I made at Madras several observations of its latitude, and have determined it  $13^{\circ} 13' N$ .

Madras.

From Madras to the reef of Trifou or Natoer, the course is NNE. 3 leagues. You may know when you are near it by a small cluster of trees of equal height, and whose top resembles a kind of table. When this wood and two palm or cocoa-trees are in one, you are athwart this reef, which projects a good league into the sea. Having opened the two trees, with the little wood a sail's breadth, you must steer NE. to keep clear of the bank which lies off Paliacata (m), the Southernmost part of which bears NEbE. 2 miles from the pitch of the reef.

Reef of Trifou or Natoer.

Keep the lead constantly going, because as you come near the bank of Trifou the depth diminishes a fathom at each cast, as fast as you can heave the lead. So that by day or night, as soon as you perceive this decrease, you should immediately stand off, as above, to give the bank of Paliacata a good birth, and not near it in less than 10 fathoms. Without this attention you will find unequal soundings, as from 6 fathoms to 3 at one cast of the lead, which will be exceeding dangerous for a large ship; but a small one may sail throughout without fear, because there are at least 12 feet water over the shoalest part of this bank, which lies 2 or 3 miles off shore.

The

(g) i. e. its Northern extremity; where, according to the English Pilot, is a small pagoda, called Conymere, and an English factory.

(h) Or high-land.

(i) Mr Nichelson, who was there since the Neptune Oriental was wrote, takes no notice of this; but particularly relates the position of all the Seven. Indeed it is somewhat extraordinary that this should be destroyed at such a distance, whilst that washed by the sea should escape.

(k) Instead of these rocks, the English Pilot mentions a shoal of sand to the Southward of Cabelon, which stretches near 2 miles to seaward; but Mr Nichelson takes no notice of either.

(l) There have been several alterations made here, since it was taken by the French, and has been restored by the peace of Aix la Chapelle.

(m) Or Pullicatu.



Bank of  
Paliacata.

The bank of Paliacata extends NEbN. and SWbS. Those ships that sail 3 leagues distance from the coast need not fear these two banks.

To anchor before Paliacata, you must not stand in for the land, 'till the flag-staff of this factory bears WbS. so may you safely approach it; and will find 6, 7, and 8 fathoms water. This should be understood in case of a Southerly wind, for if it should be Northerly you must bring the flag-staff to bear SW. especially in a ship that draws 16 feet water; for in a small vessel (*n*) there is nothing to fear from this outer bank: However, it is necessary that those who are not sufficiently acquainted with this coast, should be upon their guard, in both these respects.

The North end of the bank lies SEbS. from the river of Paliacata. Two miles to the Southward of this river is Gueldre Fort, belonging to the Dutch. The common anchorage is EbS. from the flag-staff, in 5, 6, or 7 fathoms water.

Paliacata  
or Pulli-  
catt.

The course from Trifou to Paliacata is NNE. distance  $5\frac{1}{2}$  leagues. The coast between them is low to sea-ward; the inland part is high land, called by navigators the mountains of Paliacata. This place (*o*) lies in latitude  $13^{\circ}35'N$ .

Cicara-  
Hoeria,  
or Sikara  
hori.

From Paliacata to Cicara-Hoeria the coast runs NbW. 8 leagues. Near this place is a reef like that of Trifou, which runs as far as that into the sea, but farther along the coast; at the NE. point of this reef there is another, at 2 or 3 leagues distance from the coast. It is about 10 leagues long, North and South, and the soundings on it very unequal. To go to Armegon you may go between these two shoals; but you must be experienced herein, or else it is better not to venture; yet afterwards you find between the coast and this bank a large and exceeding fine channel, which extends NbE. and SbW.

To sail with a fair wind from Paliacata without this reef, you must keep off the coast, steering NNE. along the reef, and come not under 8 or 9 fathoms water. If you get into 12 fathoms you must edge in again to 9 fathoms. This is absolutely necessary for those who go to Masulipatnam, because in June, July, and August, the currents set NE. and even sometimes more Easterly: So that if you keep too far off, you would run the risque of losing your passage, as it has happened to several ships, that have not been able to fetch nearer than Narisapour, and from thence turn it, but with great difficulty to reach Masulipatnam.

Armegon  
or Arma-  
gon.

It is reckoned 26 miles from Cicara-Hoeria to Armegon. The trenching of the coast is something more Westerly than in the preceding paragraph. Within land may be seen Mount Armegon: When it bears West you may perceive a little to the Southward, near the shore, the ruins of an old English factory, and to the SSW. the mountains of Paliacata.

Caletoer  
or Cale-  
toer.

From Armegon to Caletoer the coast runs North, somewhat Easterly,  $6\frac{1}{2}$  leagues; but the course to pass without the bank of Armegon is NNW. in 10, 11, or 12 fathoms water.

Divelan.

From Caletoer to Divelan the course is North, and distance 10 leagues (*p*) that is to say, 7 leagues from Caletoer to Point Peny, and 3 leagues from Point Peny to Divelan. From Caletoer you must sail in 16 or 17 fathoms, and come no nearer, on account of a dangerous bank, which lies 4 leagues North of Caletoer, and projects 4 miles out. This bank is very shoal, and consequently the more dangerous.

The Sieur de la Touche, in his Memoirs, relates an event which happened to him off this bank, and which I think necessary to insert here. Being at anchor off it in 25 fathoms, he prepared in the night-time, with a favourable wind, to make a trip NW. and regain the depth of 13 or 14 fathoms. Though the wind was moderate, and he had got but a little way, in less than a quarter of an hour he fell from 15 to 5 fathoms: This obliged him to hawl off immediately: However,

(*n*) Of 9 or 10 feet draught.

(*o*) Pullicatta.

(*p*) Most Directories have made 12 leagues distance from Armegon to Caletoer; but the Authors must certainly mean from Caletoer to Divelan; for this will not agree with the difference of latitude, and the situation of these two places: Therefore I have determined more exactly.



However, on heaving the lead, and finding the second time 15 fathoms, he imagined he might be deceived in the sounding: But he hath since learned that this bank really shoals from 15 to 5 fathoms, as he had found it: Therefore you should in common prudence keep upon your guard in this part; and observing to keep in 17 fathoms, you have nothing to fear.

Six leagues NbW. from Divelan is Cerara: you may coast it in 8, 9, or 10 fathoms. To the Northward of Cerara are two very thick woods; and in the town a white pagoda. Within land are some high mountains, which shew themselves 10 or 12 leagues at sea, in clear weather. Cerara,  
or Carera.

From Cerara to Gondegam the coast trenches NEbN.  $\frac{1}{4}$  N. 6 leagues. Along this coast runs a bank, projecting a little into the sea, and without it another; but small vessels may pass within it: Neither of them are dangerous for large ships, that keep in 9, 10, or 11 fathoms: In approaching the river you perceive a village with a pagoda on the sea-side. Gondegam.

From Gondegam to Montepoly, the course is NE. distance about 4 leagues. You may coast it at a league distance, in 9 or 10 fathoms, oaze. East of Montepoly is a grove of palm-trees, and a little further another less, consisting only of 20 or 30 trees: This last seems higher than the other. When you sail along the coast, in the depth above mentioned, you go within the bank of sand, which lies 5 leagues SEbE. from Montepoly; is 8 or 9 leagues long, NE. and SW. On the SW. part of it, which is the shoalest, there is no less than 3 fathoms. The approaches to this bank are known by a sandy bottom; instead of which, in the channel, between that and the land, the bottom is oaze. Montepoly.

From Montepoly to Petapoly the course is ENE.  $6\frac{1}{2}$  leagues. About a league Westward of the town runs a little river, and opposite the town a grove of palm-trees, remarkable for its being flat and even, for which reason it is called the Table of Petapoly. Petapoly.

From Petapoly to Point Divy the coast runs East, about 14 or 15 leagues. You must keep in 6 or 7 fathoms, 2 or 3 leagues off shore. About 4 leagues East of Petapoly there are the entrances of several rivers, that run along the low land and form islands of it; but are not perceptible to those who sail along shore. These rivers ebb and flow. A navigator hath observed the water here to rise and fall 4 feet, being at an anchor in 5 fathoms, oaze. Point Divy, or Due Point.

On the West coast of Point Divy, at 4 or 5 leagues distance, you perceive the entrance of three rivers (q).

In sailing from athwart Divelan (the mountain of Cerara NWbN.) to go clear of the bank of Montepoly, you must steer NE. and take care to keep in 10 or 12 fathoms, stiff ground, and there is nothing to fear; but if the depth increases and the bottom becomes softer, edge in, and shape a course to the Eastward of Petapoly, in order to get into 9 or 10 fathoms, oazy ground.

To go to Massulipatan or Masulipatnam, when you are off Point Divy, at  $2\frac{1}{2}$  leagues distance, you must keep in 8 or 9 fathoms, to avoid the bank of Divy. When Point Divy bears West, you must round it in 7 or 8 fathoms, and steer NNW. borrowing more or less from the Westward, according as you find yourself nearer or farther from the shoal; then edge away by little and little, in 5 fathoms oaze, always avoiding the hard ground. When the depth exceeds 6 fathoms, you must borrow more from the West, and steer thus as far as the road of Massulipatan, before which you anchor, in 4 or 5 fathoms, oaze, at  $1\frac{1}{2}$  league off shore. Massulipatan.

The coast to the Northward of Point Divy is low land, level, and without trees. Along this coast may be seen the mouths of two rivers. Near Massulipatan you see a tuft of palm-trees, about a league to the SW. These palm-trees, in coming from the SE. seem to form only one great tree; but may be seen separate as you approach.

Without

(q) And herein observe, that to avoid confusion, I have only represented, on the chart of this part of the coast, the principal mouths of these rivers.



Without this mark, Massulipatan is easily distinguished by the houses and flag-staffs of three nations, French, English and Dutch. To the Northward of this town there is a wood cut even, the trees whereof are of an equal height. All the bottom of Massulipatan bay is oaze, except near shore. The depth doth not decrease above half a fathom for a quarter of a league.

I observed above, that if you are bound to Massulipatan, in the Westerly monsoon, it was necessary to keep soundings on the coast, whether sailing within or without the banks of Armegon and Montepoly. This holds good from the month of May to October; but in February, March, and April, as the winds in general blow between the East and South, you must steer for Narfapour, or even more to windward if possible, in order to give the bay of Petapoly a good birth, whence you cannot, without great difficulty, get out, without the help of Westerly winds, which you must wait for.

In May you may shape a course between Massulipatan and Narfapour, because the winds vary then from SSE. to SW. and sometimes as far as WSW.

In October, November, and December, here is but little navigating, nor indeed all along this coast. In the months of December and January, if you are at the bottom of the coast of Coromandel, you cannot return, because the NE. winds and currents, that run to the Southward, are then in their greatest force.

Narfapour.

From Massulipatan to Narfapour the course is EbN $\frac{1}{4}$ N. distance from the town 13 $\frac{1}{2}$  leagues, and from the road 12 leagues. The coast between the two is encompassed with a bank, that projects half a league. Opposite the river of Narfapour is another bank, about a league from shore. There are on the bar of this river 8 or 9 feet water.

Some charts place a bank 3 leagues South of Narfapour, that some describe rocky, and others soft; and upon it not less than 3 $\frac{1}{2}$  fathoms water. All the navigators, who have sailed to Massulipatan, mention nothing of this danger in their journals, though the major part, by track, have run over it: Therefore I have not marked this bank on my charts; because it is not likely, it being so small a distance from a place so much frequented, but some navigator or other would have mentioned it, if it had existed. The English Pilot, in whose charts it is represented rocky, mentions not a word of it in his instructions: And indeed if its existence is real, you may prevent the dangerous effects of it, by keeping your lead going; which you must always observe in these parts.

Point Godvarin or Gordware.

From Narfapour to Point Godvarin, the coast (r) runs East, 13 or 14 leagues. About 8 leagues to the Eastward of Narfapour you see two white pagodas, which you should take care not to confound with those which are a league West of Godvarin Point; to the Eastward of which pagodas is the river Visseron. Several navigators mistake herein, for want of observing that these last are three in number. In sailing from the Westward, you should approach the bank of Godvarin but in 12 or 16 fathoms; because it is steep, and has unequal soundings on that side; but those who come from the Eastward, and go to Yanaon, may pass it easily in 6 or 7 fathoms, sandy ground; but come no nearer.

The English Pilot gives this bank 2 leagues extent, towards the SE. and some draughts give it only on the North side. I have placed it in my new Charts according to both these opinions, between which I was not willing to decide, because I did not find sufficient authority to do it with certainty.

The ships that sail from Narfapour generally keep 3 or 4 leagues from the coast, in 16 fathoms, in order to avoid this bank. This precaution appeared to me very prudent.

Narfipelle or Narfipyle.

From Point Godvarin to Narfipelle, the course is NWbN $\frac{1}{4}$ N. 8 leagues. This place is upon an island, between the entrances of two rivers. The Directory of the English Pilot tells as there is on each side a reef, that projects at least 4 miles; but that you may borrow on it to 6, 5, or 4 fathoms, but no nearer.

Between

(r) The coast lies EbN. according to the charts; so that I think he rather means the course is East, in order to give the Point a good birth.



Between Narfipelle and the point of Godvarin,  $1\frac{1}{2}$  league from the latter, is the mouth of Yanaon river, on which the French have a factory for the Callico trade; and 10 miles to the N. Eastward is the pagoda of Corango. The mouths of several rivers meeting in this bay form several islands, with spits of sand, which run 4 miles out: However, there is no danger if you round them in 5 fathoms.

Point Godvarin and Vatare bear off each other North and South 10 leagues. The mountains on the coast of Gergelim and Orixá begin in this part. Vatare is known by a mosque built on the top of a hill.

Vatare,  
Watfare,  
or Watere.

Having doubled Godvarin Point, you may perceive Vifigapatnam, one of the chief European settlements. This place belongs to the English. It bears from the former  $NE\frac{1}{2}N$ . distance 24 or 25 leagues (s). Vifigapatnam distinguishes itself by a great steep hill, at the foot of which the sea breaks; to the Northward thereof is a little bay, where you may anchor; but nearest the North shore. On the South side of the great hill is the entrance of a river, and another to the Northward of a little hill, on which is seen a small white pagoda, which is not discovered in sailing from the Westward, till you have passed the great hill.

Vifiga-  
patnam or  
Vifiaga-  
patam.

From Vifigapatnam to Bimelipatnam, the coast runs  $NE\frac{1}{2}E$ . distance 4 leagues. It is known by a long mountain, which runs inland, from the sea-side: You perceive also upon the shore a little hill, about 2 leagues to the Westward of Bimelipatnam, like a sugar-loaf; when you have passed it, you may see the Dutch factory on the West side of the river. You may anchor there in 6, 7, or 8 fathoms, soft ground, the factory bearing  $WbS$ . To lie on the other side of the river it must bear  $SW$ .

Bimeli-  
patnam,  
or Bimli-  
patam.

From Bimelipatnam to the river of Conar the course is  $NEbE$ . distance 8 miles. In coasting you keep in 6 or 8 fathoms, and 9 at farthest, which carries you clear of the rocks.

Conar  
river or  
Canary.

From Conar river to the point of the same name, the coast runs  $NNE$ . 4 miles. To the Eastward of Conar you see a thicket of palm-trees,  $SEbE$ . 2 leagues from which, are the rocks of Conar or Santipelly. If you would sail between the main and these rocks, the best channel is to keep in 7 or 8 fathoms; but at farthest no more to sea-ward than 9 or 10, nor nearear the shore than 5 or 6 fathoms.

PointSan-  
tipelly or  
Canary.

If you intend to sail without this danger, you should not come nearer than 16 or 17 fathoms. In this case the surest way will be to keep in 20 fathoms, which will carry you two leagues wide of these rocks; near which the current sets strongly on them.

From the point of Conar to Ticacoel or Chicacol, the coast trenches  $NE\frac{1}{4}E$ . distance 34 miles; the land between them forming somewhat of a bight. Chicacol is by a river, near which are 3 or 4 great trees, and some palm-trees. You may keep  $1\frac{1}{2}$  league offing, in 13 fathoms, sandy ground.

Ticacoel  
or Chi-  
cacol.

From Chicacol to Calreigapatnam, the bearing is  $NE$ . distance 13 miles. This place is known by 3 or 4 great trees to the Northward. You have 13 or 14 fathoms a league from the shore.

Calreiga-  
patnam  
or Calin-  
gepatam.  
Calataer,  
Alefare, or  
Aleture.

From Calreigapatnam to Caletaer, the bearing is  $NE\frac{1}{4}E$ . distance 19 miles. The depth is the same as above-mentioned, at an equal distance from the coast. You see between them two thickets, each consisting of about 10 or 12 palm-trees.

From Caletaer to Pondy, the coast trenches  $NE$ . Easterly, distance  $5\frac{1}{2}$  leagues. The depths are 12, 15, and 17 fathoms, at  $1\frac{1}{2}$  league from the shore, sand mixed with large gravel. Close in shore, before the river of Pondy are 10 or 12 rocks, and within land some high rugged mountains, which thwart the river; those along the coast are of a middling height, but equally rugged.

Pondy.

From

(s) Between them lie Panary and Pandy; the former, according to the English Pilot, is  $ENE$ . 20 miles from Watfare, and is known by a small hummock on the island, to the Westward of which is a small bay, and a creek for boats: The latter is about 2 leagues farther, and is known by some great rocks above water, about a musket shot from shore. You may keep about 2 miles offing, in 10 or 11 fathoms.



Barva or  
Barrar.

From Pondy to Barva, the bearing is the same as above-mentioned, and the distance 5 leagues. To sail from one to the other, keep about 4 miles offing, in 15 or 16 fathoms, sandy ground. The mountain of Barva is high, and round it are some hillocks: The most remarkable is to the Southward of the river: To the Northward of the mountain are several others like it; but somewhat higher.

Sommaveron,  
Ganjam,  
or Somme-  
warren.

From Barva to Sommaveron or Ganjam (t) the coast inclines to the NE $\frac{1}{4}$ E. distance 8 leagues. You must keep an offing of 2 $\frac{1}{2}$  leagues, in 20 or 25 fathoms; nearer, the soundings shoal very fast. To the Southward of Ganjam river is a thicket of palm-trees, that seems to be of the extent of a cannon-shot. On approaching it, you discover another, even at the top, like the table of Petapoly: and to the Northward 5 tops of hills, making 5 saddles: Also near this river is a little fort.

Karapar,  
Kampare,  
or Carre-  
parre.

From Sommaveron to Karapar it is reckoned 6 $\frac{1}{2}$  leagues, NE $\frac{1}{4}$ E. There is nothing remarkable between them but the 5 tops of hills, above noticed and the pagoda of Montercotta (u), which stands by itself, upon a moderate low land, woody and pretty even, as I have described it in my chart, No. VIII. Three leagues NE. of this pagoda appears the mountain of Karapar: Though it is not one of the highest on this coast, yet when it bears NNE. it may be known by its shape, which represents a long tomb, a little steep on the side next the shore, towards which it declines; whereas the more inland hills run off as the coast. This different direction makes the mountain of Karapar form an angle with the others, towards the NW. between which, to the Southward, a plain extends as far as the 5 tops of hills above-mentioned.

Manik-  
patnam  
or Mani-  
cipatam.

From Karapar to Manikpatnam, the bearing is NEbE $\frac{1}{4}$ E. distance 9 leagues. The coast makes a bay between them; in which there is no good anchoring ground, but about 3 leagues to the Southward of Manikpatnam: Indeed it ought to be avoided; especially with a SE. wind.

From Karapar, the mountains that go no further to the Northward leave; between them and the shore, a plain of reddish soil, especially near the sea-side. Off Manikpatnam a bank of sand projects 2 miles: It shoals from 10 fathoms suddenly to 4; so that you must come no nearer than 12 fathoms. The soundings, a league from the shore, are sandy; and muddy at 2 leagues. Manikpatnam may be seen, when the mountain of Karapar bears WSW. 7 or 8 leagues. It is known by a little pagoda, encompassed with houses and other buildings, with some large trees.

Jagrenat  
or Jakara-  
nat.

From Manikpatnam to Jagrenat (x), the course is ENE $\frac{1}{4}$ E. distance 5 leagues. There is no danger along this coast; therefore you may keep at what distance you think proper. The depth is the same as above-mentioned, and the land of the same colour. Jagrenat is counted one of the most celebrated pagodas of India: Here is a large town, about 2 leagues from the sea-side; the height of its buildings shew it afar off. As soon as you are off Manikpatnam, you may perceive the pagoda from the mast-head: At this distance it appears like a large ship under sail. On approaching it, it looks like three pagodas, near each other. The SW. one is exceeding high and round, finished aloft with a large ball on the top of a spike. The second, which almost joins to the first, appears less round at the top. It has also a spike and a ball, as has likewise the third, which is the least, and round like the first. These three pagodas, which seem joined together, form a high and large building.

The  
Black  
Pagoda.

Four leagues EbN. of Jagrenat pagoda, is the Black pagoda, which at a distance (like the former) resembles a large ship under sail; but on a nearer view it loses somewhat of its magnitide. When you bring it to bear NNE. it looks like two buildings joined at the bottom and separate aloft, which finish in a peak. About a league WbS. there is another little pagoda situated

(t) Mons. D'Anville, in his Map of India, places Ganjam further to the Northward, where we place Manikpatnam; but ascertains no particular reason for so doing, only that he makes no hesitation in affirming that there is an uncertainty in the position of Ganjam, as he finds it elsewhere confounded with Sonnevaren.

(u) The English Pilot mentions a fort called Manterkotta, upon a small round hummock, on the south side of the river (Campan) which is the utmost bounds of Galconda, and takes no notice of the pagoda: I suppose them to be both in the same district, or government; and that the pagoda is considerably to the Southward of the fort.

(x) P. Noel, by an astronomical observation, made its latitude 19° 50' N.



situate like this on an even ground, reddish, and without trees. This circumstance is sufficient to distinguish the Black Pagoda from that of Jagrenat: Besides, about a league WSW. of the little pagoda, you discover between the two (y) a rising ground, with some trees, thinly planted; and though there is another nearly like this, at a league beyond Manikpatnam, you cannot mistake them, if you observe never so little the distance of the one from the Black Pagoda, and its different appearance from that of Jagrenat.

From the Black Pagoda to the False-point is reckoned about 18 leagues, the first 5 leagues EbN. the next 3 ENE. and the 10 last NE. The coast between these two places is encompassed with a bank, which projects half a league into the sea, and in some places a little less. Off False-point it extends  $1\frac{1}{2}$  league. The 4 first leagues the land is pretty even, and without any thing remarkable; the 4 following leagues it appears in downs or hillocks of sand; at the end of these 4 last leagues runs the little river Marsepour, near which is seen a small thicket. Three leagues to the Northward there is another little river. The coast concaves a little between the two, where it is very low; as it is for 3 leagues more Northerly: Afterwards it appears higher, by reason of a thick wood, that makes it appear more so than any you have seen from Manikpatnam.

False-point, or Flat-point, by the natives called Karreagan.

Upon approaching False-point, you would take it, although it is the main-land, for a little island, by reason of a default of wood, or the entrance of a river, which makes it appear like a discontinuation: This part, which appears separated, is the False-point. From this place, the coast (whose direction was NE.) stretches to the Northward, and more Westerly, forming a great bight. Many navigators, deceived by this appearance, have taken this False-point for the Point of Palm-trees (z); and this mistake hath occasioned the loss of several ships (a). The knowledge of the depth alone, is not sufficient to prevent this error, because upon the Easterly border of the bank of False-point, you find, for 2 or 3 casts of the lead, the same as at Point Palmiras; and the bottom of a muddy sand, gravel and small flat stones, black, and without shape, like bruised pepper; but with this difference, that at the False-point you are but 2 leagues from the land, in 15 or 16 fathoms, and may discern the coast plainly, which makes it in a regular hillock; instead of which, at Point Palmiras, you find this depth only to the East of its isle, and at 4 leagues from the coast, which being much lower is hardly seen; 3 downs of sand, a little to the Southward, are the only elevations it hath.

When you come from sea-ward to make False-point directly, you do not see these marks I have mentioned, except a thick and even wood, which has nothing of the kind near it, and which is the principal mark. Having sailed about 4 leagues from False-point, when it bears SW. there is to the NE. an opening, like the entrance of a middling river.

Off the False-point, in 14 or 15 fathoms, the course, to attain the same depth, to the Eastward of Point Palmiras is NE. 18 leagues: But you must allow for the ebbing and flowing of the tides: They are SE. and NW. or 9 o'clock. The best depth is to keep in 14 or 16 fathoms, soft ground: Nevertheless, if in this track you should find a different bottom, you need not be surprised. About 5 leagues NEbE. from the False-point, steering NE. I had soundings of red sand for above 3 leagues, and from thence oazy, as far as Point Palmiras. The change of the sand shews you are near the bank, which is fine and hard sand. East and West of this bank, the soundings are sand, gravel, broken shells, and stones without form, like bruised pepper. You often find, in 17 or 18 fathoms, soundings of black and red oaze, with broken shells. Near the land, in 11 or 12 fathoms, it is sand and red gravel. When in the night time you find these last soundings, you may round the bank, steering N. and NbW. When in this course you find soft ground, you will easily know whether the bank is doubled, because in such case the depth decreases but a fathom and a quarter for the space of a league.

Point of Palm-trees.

On

(y) i. e. Between Jagrenat and the Black Pagoda.

(z) Or Point Palmiras.

(a) In the Appendix I have subjoined some instructions for sailing in with Point Palmiras, and thence to Ballasore Road, which I was favoured with by Capt. Jonathan Ranson, an experienced pilot for those parts. See p. 134, &c.



On the contrary, it decreases very quick, when it is not doubled. If the winds blow from the Westward, you may lie close to the bank, in 10 or 11 fathoms, without fear: You have then soundings of fine sand, frequently mixed with fine gravel; sometimes they are unequal, as from 10 to 7½ fathoms. But you must beware of coming into 5 fathoms, for then you approach very near the border of the bank; and the rocks appear distinctly upon the shoalest part.

Yet be careful not to keep too far off the bank, during the Western monsoon, because you run the risque of losing soundings, by the winds which then blow from that part, and by the currents setting to the Eastward. If this happens, you must lose your passage, and will be obliged to go to winter at Chatigam, whence you cannot get out 'till November or December.

On the contrary, when the winds blow from S. to SE. (as it often happens in April, May, and June) you may keep in 16 or 17 fathoms, 'till you have doubled the outermost part of the bank. The Island of Point Palmiras is very discernable in coming from the Southward, appearing very far apart; though not above half a league at most. If you are got down within the bight, between the False-point and this island, so that it bears to the Eastward of North, you must directly hawl off, to keep clear of an elbow of the bank, which runs out 2 leagues to the SEbE. of this island. You may approach it in 12 fathoms; but come nothing under.

In case of a Southerly wind this instruction is more useful than before, because then you will have the greatest difficulty to clear it (b).

Ballafore  
Road.

Having doubled the bank of Point Palmiras, when the island bears WbS. a little Southerly, the best course to go to anchor in Ballafore road, in 5 fathoms at low water, is NNW. about 9 leagues. The navigator should be careful to observe which way the wind blows, in order to be sure of his course, because in the Westerly winds you must keep your luff to avoid falling to leeward of Ballafore Road; you must therefore keep the coast on board, in 7 or 8 fathoms; but you may approach Ballafore Road in 6. You meet no danger in this bay, but the bank of Canaca, which breaks at low water, and on its edge has 5 fathoms, hard sand. The West coast is planted with trees, all along; except for the space of a small league to the Westward of the river. This part, void of trees, serves to shew the entrance of it, which has on the West side a little white house (c). On the East side are some sand-downs, behind which you see plainly a little wood, when you go too far to the Eastward of the entrance.

Moun-  
tains of  
Nelgringe  
or Nell-  
gare.

The marks for good anchorage, when the mountains of Nelgringe are to be seen: *First*, The end of the long mountain to the Southwestward of the others W½S. *Secondly*, The middle one, which appears the highest, and is separate from the rest, WNW½W. *Thirdly*, The little one on the NE. side NWbN. The entrance of the river North, and NbW.

It flows in Ballafore Road (d) SSE. and NNW. (e). The sea rises here 10 feet in the spring, and 7 in the neap tides. The ships that intend to anchor in 5 fathoms, at low water, ought to pay great regard to this.

If in cloudy weather, when the mountains of Nelgringe cannot be seen, and the entrance of the river hardly to be distinguished, you seek the 5 fathoms, because in this depth you are at least 4 leagues off shore, you must have recourse to the marks already shewn, and which distinguish it plainly; that is to say, the void of trees to the Westward, and the downs which lie along the Eastern bank.

Piply  
Road.

It is reckoned about 9 leagues EbN. and ENE. from Ballafore Road to that of Piply. In this track you keep in 6 fathoms, at low water. Piply is known by a pagoda to the Westward

(b) The Sieur de la Touche, in his Memoirs, speaks of a bank, bearing EbS. 9 leagues from Point Palmiras, on which he was told a ship had been lost. A Danish captain assured him he had seen this bank when dry, and that having been carried off the coast by a gale of wind, the depth increased upon him to 60 fathoms, and afterwards diminished by little and little to the sight of it. This bank hath been searched for accordingly, but could not be found; however, it cannot be amiss to keep the lead going.

(c) The English bankshall or store-house.

(d) At full and change.

(e) Or at ½ an hour past 10 o'clock.



ward of the river, and a thicket of trees very near it, which are sufficient to distinguish it; if you cannot see the pagoda, you must bring them to bear NWbN. in order to get into good anchorage. If in a small ship you coast it in a less depth, you must take care of a bank, opposite the river, which projects 4 miles off the coast.

It is computed about 4 leagues from the anchorage of Piply to the first brace, or channel to enter the Ganges.

The ships bound up the Ganges are not always obliged to anchor in Ballasore road for pilots, because you frequently meet their boats, as soon as you have doubled Point Palmiras. Each nation have their peculiar ones, nor is it proper to use them promiscuously (f): Many sad accidents have befallen those who have trusted them too far at first sight.

I here conclude the navigation of this coast, without entering into the particulars of the braces, and the entrance of the Ganges, which requires the experience of the pilots for that river. The Directions in the English Pilot, of this part, might be good in the time that he gave them; but the alteration of the banks, made by the freshes in many places every year, renders them notwithstanding, absolutely useless: Therefore I thought it of no service to give instructions, which (though certain for one year) might endanger those ships that might follow them at any other time.

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#### INSTRUCTIONS concerning Voyages to BENGAL, at different Seasons of the Year.

THE most favourable time for ships to sail to Bengal, is from the end of February to the middle of September: But as navigators, in order to shape their course for a good landfall, should be mindful of the winds and currents, which prevail in the gulf during this period, it will be necessary to give some instructions relative to the variety of both in the different months of the year.

If you sail from the coast of Coromandel, towards the end of February, and during the current of the month of March, it is necessary to keep a good offing, in order to reap the advantage of the S. and SSW. winds, that blow here; whereas near the coast they often vary from NE. to SE. then shape your course to make the coast of Orixá, in about the latitude of  $19^{\circ}$ , and coast it thence to Point Palmiras, observing what has been said in the preceding chapter.

The ships that sail in this season, from the coast of Malabar to Bengal, without touching at any place on the coast of Coromandel, ought to keep the Island Zeloan on board, as far as Bacalo, and thence make a stretch to the coast of Orixá, as above.

During the months of April and May, when the winds blow more frequently from the Southward, and are in their full force, you must, in like manner, make the coast of Orixá; guarding particularly against the currents, which set to the NE. (g) and keep a good offing, as soon as you experience them; because with SE. winds you will be troubled to clear the coast, if you follow the different bights, which it makes. When you see the pagoda of Jagrenat, keep in from 5 to 20 fathoms, as far as the bank of Point Palmiras, to which you must come no nearer than 8 fathoms.

As the Westerly monsoon is in its height in June, July, and August, it is necessary to keep more to windward than in the preceding months; that is to say, to make the coast in  $18^{\circ} 30'$ . This precaution is the more necessary, as you may be often mistaken in the estimation of your course, by the currents, which generally are governed by the direction and force of the winds, which is the reason that ships fall in with the land more Easterly than they imagine.

When

(f) Or each nation have some brought up for their own ships; nor is it proper to use those of another nation, when those of your own may be had. (g) Rather to the Northward, as they commonly set with the wind, therefore the more to be guarded against.



When you are within sight of land, keep in between 12 and 16 fathoms, and for the rest conform to the directions above; particularly concerning the bank off Point Palmiras, which you must then keep well aboard.

September  
& October.

The course ships ought to make, that sail from the coast of Coromandel after the middle of September, and in October, is very different from the preceding, because the Westerly monsoon then draws towards a conclusion, and the winds frequently blow from the NE. therefore instead of making the land to the Southward of the False-point, you must at least keep out in the middle of the bay, so as to be able to weather Point Palmiras: However, this will not always suffice: for the nearer the time of the monsoon's change, the more you must guard against it. The vessels that can make the coast of Arrakan, by help of the varying of the winds, are much more sure of saving their passage than those who neglect it, and think it sufficient to keep mid-channel. In the following paragraph I shall treat of the different courses to be steered, and the dangers met with on the coasts of Ava and Arrakan. If by neglect, or any unforeseen accident, you fall in with the land to the Southward of the False-point, you risque the loss of your passage, or at least a considerable delay, for want of favourable winds to get to the Northward, and stem the violent currents, which set SW. from the latter end of September till the month of February; but their greatest force and rapidity is in November and December, when they run 3 miles an hour. The ships which fall in to the Northward of the False-point, if they would double that of Point Palmiras, must take advantage of the tides, by anchoring when they make against them. If you sail from Mergui for Bengal, towards the end of October, you must tide along the coast of Tenasserim, but no farther than  $15^{\circ}$ , or at most  $15^{\circ} 10'$  N. latitude, on account of the banks in the bight of Martaban, which are exceeding dangerous, because they are dry in many places, and the tides there very violent and terrible, rising 10 feet at once, in a bohr.

Coast of  
Pegu.

Having got into this latitude, you shape your course WbN. to fall in with the coast of Pegu to the Eastward of Negraile (*b*), but come no nearer the banks that surround it than 7 or 8 fathom. The lands are extremely low; you can only distinguish the trees, without any mark in particular; for which reason, in hazy weather, it is necessary to keep the lead constantly going.

Diamond  
Island.

From hence direct your course to sail  $1\frac{1}{2}$  league wide of Diamond Island, on account of a rocky bank, which breaks at low water, and projects one league to the Southward of this island. In this track you will have 8, 9, 10, and 11 fathoms, muddy ground (*i*).

Negada  
or Sunk  
Island.

About 5 leagues SSW. of Diamond Island is a rocky bank, called Negada (*k*) or the Sunk Island, a little above water. Half-way between these, they say, there is a rock, on which is 20 feet water. The ship Le Castricon saw it, in 1698, and others report, that in sailing 11 fathoms water they perceived its breakers very near. This circumstance proves that there is less (*l*) water on this rock, and that every ship whatever should carefully avoid it. The surest method is not to exceed 10 fathoms in passing Diamond Island.

Negraile  
or Ne-  
grais.

Having doubled Diamond Island, you steer for the South point of the great Negraile Island, remarkable for a great rock, rising above water, which is very near it, and a hill, on which is a pagoda: Then you keep the wind, to coast the West side of this island, which lies NbW $\frac{1}{2}$ W. taking care of a bank, close to which is 4 fathoms water; it lies (*m*) WNW. 3 miles off the South point above mentioned. The West coast of Negraile is of a moderate height, rugged at top, and may be seen 9 or 10 leagues. There are along this coast several small islands.

The depth from the South end, as far as 5 leagues more Northerly, is 45 fathoms, 4 leagues off shore, and 12 a league off. Towards the North end there are no soundings 4 or 5 leagues off but 2 or 3 leagues off you have 40 fathoms.

Leaving

(*b*) Or Negrais. (*i*) At Diamond Island are great plenty of turtle to be found; many of them 4 or 5 hundred pounds weight.  
(*k*) Also Neijade and Leguads. It is in one with Diamond Island, and the Little Negrais, when they bear NNE, and SSW.  
(*l*) Than 20 feet; at least sometimes. (*m*) i. e. Its Western extremity. See p. 84.



Leaving Negraile Island, you continue to stand to the Northward, in sight of the coast of Ava, off which are many islands, and some dangerous, which are said to be all apparent. The most dangerous is situated in  $17^{\circ} 6' N.$  5 leagues from the main-land. It is a little low island, surrounded with rocks under water, for  $1\frac{1}{2}$  league off, and is called the Buffalo.

Coast of  
Ava.

Island or  
Rock  
called the  
Buffalo.

Twenty-five leagues more Northerly, in  $18^{\circ} 20' N.$  is another little island, surrounded with rocks for half a league about: It is 5 leagues SbW. from the island of Cheduba.

The Island Cheduba, situated in  $18^{\circ} 45' N.$  extends 7 leagues NbW. and SbE. At a distance it appears like a cluster of little islands, on account of its ruggedness. From each end projects a reef,  $1\frac{1}{2}$  league North and South, and as you pass it at half a league distance, you see a little island about the middle of it.

Cheduba  
Island.

I should observe, that from Negraile island to that of Cheduba, the coast of Ava has no soundings off it: Therefore you should avoid coming too near it in the night, for fear of the dangers about it. This advice is chiefly to those who depend too much upon the estimation of the distance.

Journal of  
the ship  
La Reine,  
in 1737.

When you are got the height of Cheduba Island, and about 8 or 9 leagues to the Westward, you should steer NW. 'till you get into 50 fathom, mud, which is generally met with in 40 or 45 leagues, on this point of the compass. Thence steer WNW. and WbN. to get soundings on the foot of the Ganges banks. You may near them in 12 fathoms. They are easily known when you are near them, by the soundings, which are hard sand. You find no mud, but at the entrance of the several channels, which are formed by these banks.

Keep in the depth above mentioned, not exceeding 15 fathoms, and this will carry you to Ballasore road.

There can be no direct course pointed out from the foot of the Ganges banks to this road, on account of the tides off the different mouths of this river. The best method is to keep the lead constantly going.

It is not always sufficient to sail to the height of Cheduba Island to cross from the Eastern coast of the gulph to Ballasore road; for you sometimes (in this season) meet with variable winds from NE. to NNW. and with these winds you cannot make the course above-mentioned. In this case, to render the passage more certain, you must work to the Northward, 'till you are in sight of the Broken Island, which forms the South point of the river Arrakan, from whence, with more certainty, you may cross, and get soundings off the Ganges, as above: Only observe, that after passing Cheduba the tides of Arrakan river have an effect.

Island  
Broken  
Island.

Ships bound to Bengal, from China, Manilla, or any other part to the Eastward, in passing the straits of Malacca, during the NE. monsoon, must keep as far to the Northward as possible, along the coasts of Queda and Tenasserim, in order to make Negraile, and thence direct their course as in the preceding paragraphs.



*of the EASTERN COAST of the Gulf of BENGAL, and the adjacent Islands, from the Mouth of the GANGES to the Straits of MALACCA.*

FROM Sagor to Chatigan (n) the coast is exceeding low, or rather it is a chain of islands, formed by the different mouths of the Ganges, which spreads the bottom of the gulf: these islands are surrounded with very dangerous banks, which extend Southward as far as  $21^{\circ} 23'$  North.

Chatigan,  
Chitigan,  
or Xetigam.

(n) Chatigan, Chitigan, or Xetigam,



North latitude (o). There are between these banks and islands several passages, which are not frequented, because most of these rivers are subject to such a sudden rise of water, that, as soon as the flood makes, it rises in a wave or bohr, several feet in an instant.

A small Portuguese ship, drawing 10 or 12 feet water, got into one of these passages; After many attempts, it was lucky enough to find its way into the Ganges, by the river Rangafoula. The islands that border upon these banks are barren and uncultivated; they have no water but the overflowing of the sea. The crews of ships, escaped hither from shipwreck, have been ready to perish with hunger, necessity obliging them to feed on the pith of reeds, and it was not till they had endured many fatigues and distresses, that they at length arrived at places inhabited.

The danger of approaching this coast, is the reason why navigators have not attained any farther particulars of it.

As to those of the river Chatigan, which have been communicated to me, the relators do not essentially agree amongst themselves; so that I thought it better to say nothing of it, than to give for certain an account without good foundation.

River  
Arrakan.

From Chatigan to the river Arrakan is computed 50 leagues SEbE. The hazard there is in trading with the people of Arrakan, whose government is so anarchical, makes this coast little frequented, and consequently not much known: It is only known, that 10 leagues SE. (p) from Chatigan is a bank extending 5 leagues from the shore, and that from this bank, for the distance of 25 leagues, the draughts do not describe any danger. The rivers, which empty themselves hereabouts, are neither considerable nor navigable. At the end of this extent begin the banks, which continue along the coast, as far as the mouth of Arrakan river. The edge of that which projects the farthest, is 6 leagues from the land to the Westward of Mawhill, situate on the North side of the river of that name. That to the Southward is formed by the Island of Badremacan, which makes the North point of Arrakan river, and that of Maw is one of its mouths.

To go into the river Arrakan, you must make the Broken Island in  $19^{\circ} 47' N.$  latitude, in order to avoid the banks to the Southward of Point Badremacan. Off Broken Island you have regular soundings, which gradually decrease to 7 fathoms. You continue to coast this island as far as its NW. point, where you may anchor, and wait for a pilot, if you want to go up the river.

To the SE. of Broken Island the coast forms a considerable bay, full of different sized islands, the farthest and Southernmost of which is that of Cheduba, mentioned in the direction for the voyages to Bengal (q); to that also I refer for what concerns the coast of Ava, as far as Negraille, having nothing more particular to relate.

REMARKS of the *Sieur DE LA TOUCHE* for entering the Harbour of NEGRAILLE.

“ **C**OMING from the Westward, and in sight of the South point of the great island Negraille,  
 “ you make directly towards it, taking care in approaching it, of the bank which projects  
 “ a league from it to the WNW. for which it will be proper to have the lead near at hand (r).  
 “ You may coast it in 5 or 6 fathoms (s), and in this depth round the South point, which is  
 “ known by a great rock, almost contiguous, and by a little pagoda, situate upon a hill: But  
 “ without this remark, the discontinuation of the coast, and Diamond Island, which you may  
 “ see at a distance, are sufficient to prevent your being mistaken. You must continue to coast  
 “ the South and East parts of this island, till you are athwart the NW. point of the Little  
 “ Negraille (t): Then you quit the larboard side and keep on the starboard, to round this  
 “ point

(o) Journal of the *Sieur Barbotin*, pilot of the ship *La Reine*, in 1717.

(p) This shoal, according to the chart, stretches to the South-Westward from the North point of a river, which, according to M. d'Anville, is Shatigan river: M. d'Apres seems to understand the great river to the North-Westward of this, to be the river of Chatigan, which, according to M. d'Anville, is the great branch of the Ganges, as may be seen in his map of India, and geographical illustration thereof. (q) Page 47. (r) There being

4 F. close to it. See p. 46.

(s) The depth is not above 6 F. any where, between the S. point of Gr. Negrais and Diamond Island nor any less towards Diamnod Island till within  $\frac{1}{2}$  a mile thereof. The bottom dark grey sand. (t) Or Deer Island.



"point of the Little Negraïlle, within which you may anchor, in 6, 8, or 10 fathoms water, off the low-land. In this course come not too near the Great Negraïlle; on account of a sand bank (steep to) right off a bay full of trees, which are to be seen here."

From Little Negraïlle to Diamond Island, at about  $\frac{3}{4}$  the distance of one from the other, lies a shoal, pretty steep on the NW. side, which makes the entrance of the harbour dangerous, and obliges you for safety to coast along the Great Negraïlle, keeping in  $6\frac{1}{2}$  fathoms, because in 7 fathoms you may run aground before you are aware, as it happened to the French king's ship, called L'Indien, commanded by M. de Predine, which was lost there in 1698; imagining, by the increase of the depth, that he was in the best channel.

Some pretend there is a channel between the South part of this bank and Diamond Island; but I would not advise any to go that way, even in a middling ship.

Coming from the Eastward to enter Negraïlle, you pass  $1\frac{1}{2}$  league to the Southward of Diamond Island, without coming near it, on account of a reef, which runs off to the Southward, as mentioned in page 46. Having doubled it, you must not be too hasty to gain the channel, lest you run on the SW. part of it: The best course is to keep along the edge of it, 'till you bring the South point of the Great Negraïlle to bear NE. then stand directly for it, and coast it as already mentioned. The ships that come from the South or SW. are also to take notice of this paragraph.

The West side of the Little Negraïlle is low, filled with trees and bushes; the East side, on the contrary, is hilly, from whence descends good water. In the woods are elephants, wild buffaloes, stags, hogs, and several other sorts of animals.

As for the bank of the Island Noyee (u), that lies SSW. off Diamond Island, I have given a sufficient description of it, in page 46, to which I refer the reader.

It is reckoned about 55 leagues from Diamond Island to the mouth of Siriam river. The coast which runs EbS. and ESE. as far as Baragou river, and afterward ENE. is no more than a continuation of islands, separated by different channels and banks.

Hereupon I followed, in this part of the ninth chart, a particular draught, communicated to me by the Sieur Puel, commander of an East India (x) ship: This navigator, whose skill is well known, assured me that, in the different voyages he had made to Siriam, he found it agree with his own remarks.

All this coast (as well as the South Point of Negraïlle) is laid down in the old charts too far to the Northward by 12'. This error, which I have avoided, hath been confirmed to me by different navigators, who have observed the latitude of Negraïlle, and many other places on the coast of Pegu.

The bight of Martaban, which, according to modern geographers, makes the principal mouth of the river Ava, is not well known: It is said to be exceeding dangerous, on account of several shoals, on which the sea rises suddenly 10 feet. The ships bound to Siriam should be cautious of the tides, which run there with great rapidity.

The coast of Tenasserim and the adjacent islands are described after a particular plan, inserted in this collection, which was drawn by a French engineer. The voyage I made to Mergui enabled me to correct some mistakes in the bearings and distances of the islands that form the passages. You will find a more particular description of this part, in the instructions concerning the voyages to Mergui (y). But first I shall treat of the Islands Preparis, Cocos, Andaman, &c.

The middle of the island Preparis (z) is situate in  $15^{\circ}$  North latitude, about 80 leagues to the Westward of the coast of Tenasserim: It extends about 3 leagues NNE. and SSW. At each end of it there is a little island or rock, one of which lies 4 leagues off to the SSW. in such a manner, as that these little islands, with the principal island, comprehend a space of about

(u) Negada or Sunk Island.

(x) i. e. A company's ship, in contradistinction from a king's ship.

(y) Page 53, &c.

(z) This remark extracted from the Journal of the ship St Louis, 1732.



about 9 leagues, from  $14^{\circ} 45'$  to  $15^{\circ} 8'$ : They are surrounded with rocks above water, upon which the sea breaks continually, which makes it very dangerous coming near them. The land of Preparis Island appears woody, pretty regular, and of a height to be seen 8 leagues off at sea, in clear weather.

Islands  
Cocos, or  
the Cocoa  
nut Islands

Fourteen leagues SWbS. from the South point of Preparis, you find the Islands Cocos: Their latitude (as fixed by several observations) is  $14^{\circ} 05'$ : They bear from the islands that encompass the North point of the Great Andaman, NE. 9 leagues. On the East (a) side of the Southernmost island, you may anchor in a sandy bay, and get wood and water. Those who have been there assure me of their safety. The Northernmost of these islands is a small distance from the others, and seems to afford a passage between them. In fine weather they may be seen 10 leagues.

Andaman  
Islands.

The Andaman Islands lie North and South, from  $13^{\circ} 42'$  to  $10^{\circ} 30'$  North latitude: They are divided into Great and Little Andamans: They are inhabited; but the savage disposition of the natives (who are said to be Canibals) is the reason that they are not frequented, and therefore we can have no exact description of them.

The Great Andamans are represented in all the charts as two large islands, separated by an arm of the sea. The navigators, who have approached them, report that they are besides surrounded with a number of other little ones, as well on the East as West side, and that there are, moreover, many apparent and hidden dangers. Between the Great and Little Andamans, that is to say, to the Southward of the former, some say there is an exceeding fine passage for ships bound to the Eastern coast; but as I have no particular account thereof, I shall say no more about it.

The North part of the Great Andaman, or rather that of the islands which surround it, lies (as I said before) in  $13^{\circ} 42'$  North latitude. Between these and the Great Andaman is a passage or channel, through which the ship *Le Pondicherry* sailed in her way to Pegu: The account the captain gives of it in his Journal, which I have in my possession, deserves to be inserted in this place: It gives a very good idea of this part; but it is neither adviseable nor useful to follow his example, because the passage is exceeding dangerous, and you can reap no benefit by it. The best channel is between the Islands Cocos and these; which, as I before observed, is 9 leagues from one to the other.

### EXTRACT from the JOURNAL of the Ship LE PONDICHERRY.

“ THE 22d of November, at noon, we saw land; the most remarkable part was a low point extending to the Northward; at the extremity of which we discovered some little islands. The Portugueze pilot, whom I had engaged at Madras as a coasting pilot, was desirous of having a nearer view of them both, therefore we steered East for the above-mentioned point: At 5 P. M. we were 2 leagues from a small island, that the pilot called the Little Cocos. As night came on I judged it proper to put about immediately, and steer SWbS. to avoid entangling myself among these islands in the night-time, especially as there was the appearance of bad weather. At half an hour past six we sounded in 40 fathoms, fine sand: At nine, as it was almost calm, and fearing the tides might horse me too near the shore, I anchored in 24 fathoms red sand,  $1\frac{1}{2}$  league from the low land, which lies at the foot of two great hills, inland.

“ At 5 A. M. we weighed, with the wind at SW. and steered NNE. to open the channel we then brought the cape to bear ENE. and EbN. to enter it, leaving the two hills and

(a) Captain Morris in the *Boscawen* anchored at these islands, in Jan. 1763. about 3 miles off the NW. part of the Southernmost island in 22 fathoms. He sent the boat to sound from the ship to the shore, which found regular soundings decreasing to 10 fathoms within a mile of the shore. They landed on the West side of the island, in a fine sandy bay; but found the rest all rocky. They found wood here but could not find any fresh water. Here are regular tides, flowing NNE. and SSW. The latitude of the Southernmost island, and which is also the Westernmost, they found to be  $14^{\circ} 01' N$ .



“ body of the land on the starboard side; and on the larboard several little islands, including that above mentioned (b), which are all of a moderate height, even and woody, and seem, as you come from the Southward, to stop up the passage; but by bringing them to the Eastward you open it, there being about 2 miles from one side to the other.

“ At noon the calm obliged us to anchor in 25 fathoms, large gravel, the starboard point East about 2 miles; and that on the larboard ENE $\frac{1}{2}$ E. 2 leagues. The whole afternoon it rained, the wind blowing very fresh at East, which obliged us to veer out all our gheer, to prevent our driving. The situation of the lands, and the width of this channel, do not at all agree with that between the Cocos and Andaman Islands, as laid down in my draught.

“ At 6 P. M. the wind being favourable, the pilot would needs weigh. The fear of some accident in the night-time, in a passage that appeared to me to be full of difficulties, made me endeavour to dissuade him from his design: But he still persisted; assuring me that he was perfectly acquainted with the place, through which he said he had been ten or eleven times: I at last yielded to his solicitations, and weighed; we then stood for the passage, steering East, EbS. and EbN. by our soundings, which we found very uneven, and full of rocks on the Andaman side, sometimes in 22 fathoms, then 11, and then 5, following the stream of the tides, which set us very near the larboard island (c).

“ When you have entered the straits the larboard side is somewhat safer than the other; though there are two or three rocks even with the water in the middle of the passage. At midnight the wind failing, and the tide against us, we anchored, being about two-thirds through. At day-break I found myself about half a mile from the rocks just mentioned, which are a little above half way. There is one quite even with the water, and the other two somewhat higher towards the larboard island. There is a little cormorandiere (d) on the starboard side, towards Andaman Island, from whence there seems to project a very dangerous reef.

“ As soon as the tides were favourable I weighed, and sailed through mid-channel exceeding quick, sounding in 15, 18, 25, and 30 fathoms. In going out we perceived 3 or 4 little islands on the larboard side; there are two in an opening, one of which is round, the other flat and very small, with three little islets at the end of it. Towards the great one (e) there is a large and round island, with many others extending to the Southward. My coasting pilot told me the tides flowed at 5 o'clock, at each end of the channel; but I dare not affirm it. You may see on the East side of Andaman island, as well as on the West, exceeding high mountains. At 6 P. M. when we were out, the larboard point bearing W $\frac{1}{2}$ N. 4 leagues; that of the Great Andaman WbS $\frac{1}{2}$ S. the Southernmost land in sight, SSW. 7 to 10 leagues; we saw two little islands to the leeward, which the pilot called the Great Cocos. From what I could observe, he made us pass between the North point of the Great Andaman and the adjacent little islands. I would not advise any to frequent this passage, especially at night, on account of the dangers wherewith it is filled.”

The Southernmost of the Little Andaman Islands is situate, in all the ancient charts, 15' more Northerly than it really is, as I found by an observation of the latitude in sight of this island: Little Andaman. This corresponds with the journal of the Sieur Martin, a skilful pilot on board the ship Le Maurepas, in 1739. His opinion of its distance from the Island Cabossa agrees with my chart. This error was so much the more necessary to correct, as this Little Andaman makes the North side of a passage, through which several ships pass, particularly those bound to Mergui in the Western monsoon.

I have

(b) The Little Cocos.

(c) This I take to be the Island Cocos, distinguished as being the principal and largest island on the board hand, going to the Eastward, and forming the Northern part of the straits.

(d) This seems to be a word of the journalist's own coining; but imagine he meant by it a quicksand: However it is not very material, as I believe few men in their senses will attempt this passage, whilst they can avoid it.

(e) Great Island Andaman.



Car-nico-  
bar Islands

I have found no memoirs that fix exactly the latitude and situation of the Car-nicobar Islands, with respect to some others about them. The authors of several manuscript charts, that place them 15 or 16 leagues S<sup>b</sup>E. of the Little Andaman, are absolutely mistaken, being convinced thereof by my own experience; for, after having seen this last, and finding myself in the same position, I could not see the Car-nicobar, although clear weather: but it is probable, that as this island is near those to the Northward of Sombrière channel, its situation has been determined with respect to them, rather than that of the Little Andaman: it is for that reason I have placed it so in my new charts. I thought it necessary to inform navigators of the uncertainty of its true situation.

Sombrière  
Channel.

To the Northward of Sombrière channel you find several islands, between which it is not prudent to pass, without a more perfect knowledge than what my charts give of it, (though I have taken this part from a very particular plan) for the journals of some ships that have anchored there, make mention of several dangers that are omitted: However, you may depend on the extent of Sombrière channel, the latitude of the islands that limit it North and South being determined.

Nicobar  
Islands.

The Nicobar Islands are situate South of Sombrière channel: The Southernmost is the largest, being about 9 leagues long: The Northernmost is as extensive from East to West; but much less from North to South. Between these islands is a very good passage, about 6 or 7 leagues long, called St George's channel: It lies ENE. and WSW. The biggest ships may pass through safely, if they keep mid-channel. At each end of this channel is a little island, which must be left to the Southward either way. That on the West end has at its North point a reef, extending half a mile at least. The passage between this little island and the Southernmost Nicobar is too dangerous to be ventured upon. You ought also to sail to the Northward of the other little island at the East end, on account of a reef in the middle of the channel, which may be seen to the Southward, and which renders this passage dangerous.

The ships that sail in or out of the Straits of Malacca, and those that go from Acheen to the Westward, generally pass to the Southward of Nicobar, whose Southernmost end is in 6° 40' North latitude, and 28 leagues NW<sup>b</sup>W. from P<sup>o</sup>. Rondo. This island of Nicobar has several good ports on the West side and in St George's channel. The land is high, and may be seen 10 or 12 leagues at sea: It is inhabited, as are those round it. In good weather, the natives come on board you, to traffick for fowls and other refreshments.

To supply the small scale of the ninth chart, I have inserted a very particular draught of the road of Acheen and the adjacent islands: This was drawn in 1725, by the Sieur de Verbel, an officer in the India company's service.

The latitude of this NW. part of the Island Sumatra hath been fixed, by comparing a great number of observations made hereabouts: As to its longitude, the reasons given in my preface (f) appeared to me sufficient to prove, that no method (g) could be more exact to attain the truth, than what I used for that purpose. I now pass on to the instructions for the voyages to Mergui, in which I have described the coast of Tenasserim and the adjacent islands.

(f) Page xiii.

(g) Except by a celestial observation.



## INSTRUCTIONS concerning VOYAGES from the COAST of COROMANDEL to MERGUI.

IN sailing from Pondicherry, Madras, or any other part of the coast of Coromandel, to Mergui, it is proper to shape your course according to the time of the year: Without this precaution you run a risque of losing your passage, or at least of meeting with great difficulties from the winds and currents; therefore I shall divide this instruction into two parts, on account of the monsoons, which give occasion for this distinction.

### Of VOYAGES to MERGUI, leaving the COAST of COROMANDEL, from the beginning of August to the Middle of September.

THE winds, which at this time of the year generally blow from West to SSW. oblige you to direct your course to the Southward of the Little Andaman (*b*); getting in time into the latitude of  $10^{\circ} 10'$  or  $10^{\circ} 15' N$ . If you pass this channel in that latitude, you must look out for the said Island, and thence direct your course with more certainty towards the East coast, endeavouring to make the Tores Islands, situate 20 leagues SWbS. (*i*) from that of Tenasserim.

In the  
SW. mon-  
soons.

Though it is very rare, especially at this time of the year, to find a difference to the westward; yet it is prudent, when you have not seen the Little Andaman, to run 30 leagues to the Eastward of its computed distance, before you stand to the Northward, lest by some unforeseen mistake you run upon this island in the night-time, when you reckon yourself past it: You may also go through Sombrere channel: but you will be enough to the windward in passing that of  $10^{\circ}$ .

In crossing from the Little Andaman, or the islands to the Northward of Sombrere channel, to the coast of Tenasserim, you sometimes arrive there sooner than you expect, by means of the currents which run to the NE. but as you have soundings 12 or 14 leagues off these islands (*k*); it is easy to prevent the sad consequences that may happen by these errors in the night-time.

All the islands of this Archipelago are very high, and may be seen in fine weather 14 or 15 leagues: That of Tenasserim, which you endeavour to make, when in the latitude of  $12^{\circ} 30'$ , appears, at first sight, in several hillocks like islands, by reason of its unevenness; but on approaching it they are seen to join. To the Northward and Southward are several other islands of different sizes; but the most remarkable (and which makes Tenasserim easily known) is a round little island, high and steep, called the Western Canister (*l*), about 2 or 3 leagues to the North Westward.

Island Te-  
nasserim.

North

(*b*) Or the Southernmost of the Little Andaman Islands; there being several, encompassed with a bank, that go under that denomination.

(*i*) In the chart the outermost bears but SSW. and the distance not above 15 leagues; so that if this bearing is truest, either the Tores Islands should be laid down further to the Westward, or that of Tenasserim more to the Eastward.

(*k*) Along the coast of Tenasserim.

(*l*) The resemblance of this little island to a canister inverted, which is a kind of round basket, is the reason of its being called by a name common to all those which are thus shaped.



Island  
Cabossa.

North East half East from this last you see the island Cabossa, which is of a middling size, extending from East to West: It is the height of those round about it; but not so regular as that of Tenasserim. The Island Cabossa has a little island or rock to the Northward of it: It may be easily known coming for the Southward, as there is no other to the Northward, but seems to terminate this range of islands.

Having got sight of this last, you may pass it either to the Northward or Southward, leaving the Western Canister on the starboard side, standing to the Eastward, in soundings from 30 to 35 fathoms. There are a great number of islands of different sizes round about. I shall in this place confine myself to those which form the common channel for vessels, for want of sufficient knowledge to give a particular description of the others.

When you are between these islands you must regard the tides, which flow  $7\frac{1}{2}$  hours (m) off Cabossa; but are very irregular, making their way through the different passages formed by these islands: It is therefore necessary to anchor while they are unfavourable.

Little  
Canister.

As soon as you have passed Cabossa, you may perceive, at 8 or 9 leagues distance, a small island almost round, called the little Canister: It is high, steep, and covered with trees, and very much like the Western Canister above mentioned. The difference between them is, that the North end of the Western Canister slopes more gradually than the Southern one, and forms a sort of snout; instead of which the South side of the Little Canister is shaped like the prospect in the Chart of these islands, N° XI.

You may sail either to the Northward or Southward of it, at what distance you think proper; for this island is very bold, and safe all round: Then steer between the Island Tavay and Iron Island. The breadth of this channel is about 2 leagues, clear of danger: All the inconvenience is, that you cannot anchor there safely, on any emergency, having 60 or 80 fathoms, rocky ground. We experienced this in 1740, in the ship *Penthievre*; coming out of this passage, we were obliged to anchor about mid-channel, in 60 fathoms, the tide of flood coming in with great rapidity, and after veering about two-thirds of the cable, sounding again we had 80 fathoms: Providentially the winds, though too weak to resist the tide, were favourable, and gave us an opportunity to oppose our sails against the stream; by this means the anchor, relieved from a considerable part of its stress, remained fast, 'till the ebb made, which delivered us from this bad passage.

It may be easily avoided, either in coming in or going out, taking care to anchor 'till the tides turn in your favour, according to which you are going.

From Cabossa Island to about  $\frac{1}{4}$  of a league to the Southward of the Little Canister, the depth diminishes (gradually) from 35 to 24 fathoms; but increases afterwards in the channel above mentioned. When the SW. part of Iron Island bears SEbE. and the Little Canister WNW. 2 leagues, you will find 35 fathoms, small gravel mixed with mud (n).

Great  
Canister.

About 2 leagues N $\frac{1}{2}$ W. of the Little Canister, lies an island of a middling size, called the Great Canister. I know not whether this name is given it by reason of its neighbourhood to the other; for it bears not the least resemblance to such a figure, in any point of view. The land is high, and every irregular.

The South part of Tavay Island is formed by several little islands and rocks, steep to, and separated by very small channels. The North part of Iron Island, which bears S $\frac{1}{2}$ E. from this last, terminates also in a point, with rocks above water. You find at the foot of these rocks from 25 to 30 fathoms water. The tides meeting hereabouts occasion eddies and whirlpools, which have different directions; though in general it is said that the flood runs to the Northward, and the ebb Southward (o): I think the best course is to keep at an equal distance from either shore.

From

(m) Or half an hour past 7 o'clock, at the full and change of the moon.

(n) Being the last convenient anchorage, to the Westward, going through the passage between Tavay and Iron Island.

(o) See page 59, where the contrary is said.



From hence, Long Island bears EbS. extending from North to South, along the edge of a bank of rocks under water, whereof the coast of Tenasserim, from the mouth of Tavay river to that of Mergui is encompassed. Instead of nearing this island, you must, as soon as you have doubled the North point of Iron Island, steer along its East coast, at about 2 miles distance. In this channel you have 40, 25, 20, and 17 fathoms, sand and mud, as far as the entrance of King's-Island bay, lying to the SSE. This bay is formed by the Eastern coast of the island of this name, and the Western coast of Fig (p) Island: Here the French Company's ships generally winter, unless particular business obliges them to anchor in 7 fathoms, without the bar of Mergui, 6 or 7 leagues to the South-Eastward of this place.

One league NNE. from that point of King's Island, which forms the entrance of the bay, there is a shoal, on which the Le Lys touched, in 1724: I have been upon it, to inform myself of its exact situation. Below I have given you the remarks I made, and subjoined an instruction for going in or out of this bay; but first I shall take notice of the channel between Iron Island and the North part of King's Island, through which you may also pass.

This passage has the same defect as the other; having no anchorage, but in very deep water. Therefore, prudence suggests you to avoid it, 'till the tides favour your getting through: So that when you come from the Island of Cabossa, if the tides fail, anchor as near to Iron Island as convenient, to wait the beginning of the next flood.

From this last anchorage, to get into the channel, keep nearer Iron Island than King's Island, 'till you are past the islands or rocks to the Northward of this last; the outermost island being very low, with a dangerous shelf: Then leave Iron Island to round that of King's.

This passage is longer, East and West, than that to the Northward of Iron Island, whose extent is not so perceivable, because that part of the island terminates in a point, whereas the Southernmost part is about  $\frac{1}{4}$  of a league broad: Besides, you generally have calms to leeward of this island, during which you are exposed to the tides, which do not set always alike; some ships having been driven within a stone's throw of Iron Island, and then back again, to and fro, by these eddies: And although the coast is very bold, even at this distance, yet there are bad consequences to be feared: So that, upon the whole, I think the preference should be given to the North channel before mentioned.

\*\*\*\*\*

### REMARKS on the LYS SHOAL; with DIRECTIONS for going into, and coming out of, the Bay of KING'S ISLAND.

AS the going into this bay chiefly depends upon the situation of the Lys shoal, I shall give you the remarks I made for this purpose, and for the better understanding thereof shall refer to the view of this bay, in the chart of these islands, N° XI.

This shoal is a little chain of rocks under water, extending about a cable's length ESE. and WNW. Its summit, which is the only danger, bears NNE. of the point A. (the North Easternmost of King's Island) which forms the West side of the bay: It is half a league distant from the nearest land E. Sounding upon the shoalest part I found 19 feet, at high water; and only 9 feet at low water. At the same time the point A. and the Island B. were in one; and the island D. called Panella, in one with F. the highest part of the NW. point of Fig-Island.

On

(p) Or Plantain.



On the West side, the Northernmost of the little islands between Iron Island and King's Island was open, about the width of a ship's course from the North point of King's Island. To find the different depths of water round this shoal, I made the following tracks, viz. Sailing from the shoalest part towards A. I had 6, 7, 10 and 12 fathoms; and to the Northward, 7, 10 and 15. Again, towards Fig Island the depth increased gradually, from 6 to 7, and 7 to 9 fathoms, rocky ground for about a cable's length from this danger; then 10, 12, 15 and 18 fathoms, mud, 'till within half a cable's length of Panella Island, which is a little rock on a bank of sand, on which is a cluster of trees, lying about a gun-shot from the NE. (g) point of Fig Island, with which, at a distance, it appears confounded: To the Eastward, almost joining to this rock, there is another sand-bank; and to the SW. extends a reef of rocks, part of which only appear at low water. Accordingly, to enter King's-Island Bay, whether from the Northward or Westward, you must mind to leave the N. part of King's-Island a league to the Southward, and stand to the Eastward 'till you have opened the bay (as it appears in the draught above referred to) and can see the island B. and C. at the farther end of the bay; then you may enter, leaving the Lys shoal on the starboard, and Panella on the larboard. You may pass this last safely, provided care be taken of the reef of rocks above mentioned, which extend to the SW. towards the bay. This care is the more requisite, as this reef seldom breaks, and as you risque, by the turn of the tides, being horfed upon them very fast: Nevertheless, as the passage between them is wide enough, you may very well keep clear of it. As soon as you find you have passed the Lys shoal, steer to the Westward, and anchor under King's Island, opposite a bay, wherein runs a stream of exceeding good water. The marks of this anchorage are, 1st, The point of King's Island, which makes the entrance of the bay N. or NbW. half a league. 2dly, The NW. point of Fig Island E $\frac{1}{2}$ S. 3dly, Long Island, NbE $\frac{1}{2}$ E. The sea rises and falls here 10 feet, and it is high water about  $\frac{1}{2}$  past 9 o'clock at the full and change. This is, as indeed most of these islands are, inhabited. Here is plenty of wood proper for ship-building; likewise a number of tygers and snakes.

This bay is not very deep to the Southward of the anchorage. There is a little channel, separating King's Island from that of Fig-tree, which is only passable for country boats.

If by contrary winds, or change of the tides, you are obliged to enter King's-Island bay, through the channel, between the point A. and the Lys shoal, which at most is but half a league wide, you must keep along shore by E. at about  $\frac{1}{4}$  or  $\frac{1}{2}$  of a mile distance, and take special care not to open the bay, 'till you are about this distance from it; because if you approach King's Island with the point A. and island B. in one, you run directly on the shoal; but it is necessary that the island C. be shut in by the point A. 'till you are within the above distance from the land E. then you may coast along King's Island to the anchorage.

Coming  
out of the  
Bay of  
King's  
Island.

To go out of the bay, the best track is to keep mid-channel, between the NE. point of King's Island and Panella, without borrowing from the West, 'till you have passed the shoal, which you may be assured of when you have opened the second little island or rock, between King's Island and Iron Island.

But if you are obliged to go out by the little passage, you must keep along King's Island, rounding the point which forms the bay, at about  $\frac{1}{2}$  a mile distance, and not stand towards Iron Island, 'till the island C. is quite shut in by the point A.

(g) The N. W. point rather.





## DIRECTIONS for sailing to and from MERGUI.

**W**HEN you are off King's-Island bay, and would anchor before Mergui river, in  $6\frac{1}{2}$  fathoms at low water, you must shape your course to sail about a league clear of the NE. point of Fig Island; and, having passed it, if you would keep mid-channel, in sailing towards the Island Madramacan, which you will see to the SSE. you must mind to keep the Great Canister (r) open with the South point of Iron Island, and almost shut in by the North part of Fig Island. You find the bottom mud in 15, 13, 12, 9 and 8 fathoms. The best anchorage for large ships is in 9 fathoms at high water, and  $6\frac{1}{2}$  at low. The bearings at this place, are, 1<sup>st</sup>, The North point of Fig Island in one with the South part of the Little Canister; and the South point of Iron Island NW. open about  $10^{\circ}$  from the Little Canister. 2<sup>dly</sup>, The Northernmost part of Madramacan Island, which makes the starboard side, going into the river of Mergui,  $S 3^{\circ} E$ .  $1\frac{1}{2}$  league. 3<sup>dly</sup>, The larboard point of Mergui river  $SbE$ . 2 leagues. The tides flow here almost North and South; that is, it is high water at half an hour after eleven or twelve o'clock at noon, on the full and change days, when the water rises 15 feet.

It is reckoned about 2 leagues from this road to Mergui, a sea-port town, under the dominion of the king of Siam. Middling vessels can go up the river, taking the pilots of the place to pass the bar, and anchor before the town in 5 fathoms water. At Mergui you meet with all necessary refreshments, except oxen, which the inhabitants dare not sell, since the Metempsychosis (s) has been introduced there, and made a law. The chief trade consists in elephants teeth, calin (t), and rice, which they export to several parts of India.

Although Idolatry is the established religion here, the Christians, however, have permission to profess their religion publicly, and have a church supplied by a priest of the foreign missionaries, under the title of Apostolical Vicar. This curacy, like all the missions in the kingdom of Siam, belongs to this community, who have a seminary in the capital.

At Mergui are many Mahometans, who are the principal traders of it, and have several ships, which they send to different parts of the Indies.

The French had formerly a settlement in this port; there are still the remains of their fort to be seen.

When you sail from the road without the bar, you must follow the same instructions I gave to sail thither; that is to say, to steer with the Little Canister just open from the North point of Fig Island, then coast this latter at three quarters of a league distance, and thence sail towards Iron Island, keeping the Little Canister somewhat separate from its South point: This will bring you safe, 'till you are opposite King's-Island bay, from whence you may go out, either to the Northward or Southward of Iron Island, as shall be most convenient.

All that I have hitherto said supposes a leading gale; but when it is contrary, whether sailing in or out, or to make advantage of the tides you are obliged to anchor, you must have new marks, to proportion the courses to the different breadths of the channel, in order to avoid the rocks on both sides, as follows.

From athwart the bay of King's Island, as far as the little island about half-way from thence to Mergui, you may stand to the Northward, 'till you see the South point of Iron Island in

(r) The little Canister must be meant here, as is obvious by the chart of this part, and the instructions for coming out.

(s) The Metempsychosis is the Pythagorean opinion of the transmigration of souls, which being adopted by the state as a law, is the reason why the sale of these animals is prohibited, lest the soul of a relation be incorporated therein.

(t) Pewter, or Tutenague.



in one with the middle of the Little Canister, and to the Southward 'till within a quarter of a league from the land (*u*), taking care not to be entangled among the islands.

When you have passed the little island above mentioned, between it and Madramacan you may stand to the Northward, 'till the South part of Iron Island adjoins to the Little Canister; but the most certain mark is to leave a small space between them: Without this observation, you inevitably run foul of the banks off the coast of Tenasserim, as happened to the ship *Le Lys*, which narrowly escaped being lost here in 1730.

In standing to the Southward, take care to put about before the North point of Fig Island is in one with the South point of Iron Island, leaving between them, at least, the breadth of a ship's course, in order to avoid a bank which projects out on this side the Island Madramacan. There is no need of entering into any farther detail on this subject; I shall therefore proceed to point out the track of those ships which sail from the coast of Coromandel to Mergui in the NE. monsoons.

Of voy-  
ages from  
the Coro-  
mandel  
coast to  
Mergui in  
the NE.  
monsoons.

The best advice that navigators can take, who sail after the middle of September from Pondicherry or Madras, for Mergui, is to prefer the channels to the Northward of the Andamans, rather than the Southern ones. The example of some ships, succeeding by the latter, ought in no wise to be depended upon always; for by so doing you expose yourself, if the passage is a little long, to the NE. winds, which will prevent your getting to windward of Mergui. Several ships have found themselves in this plight, and having in vain strove against the winds and currents, have been obliged to winter at Junk-Seilon (*x*). To avoid the like inconveniency, shape your course to go between the Cocos Islands and the North point of the Great Andaman, or between the former and the Preparis, whose extent and latitude I have determined, page 49.

When you are between these islands, if the winds are Westerly, you may safely steer for the Island Caboffa (*y*).

Island  
Narcon-  
dam, or  
Narra-  
conda.

Twenty-five leagues EbS. (*z*) of the North point of the Great Andaman, or 22 leagues SE. of the Cocos Islands, in  $13^{\circ} 19'$  North latitude, you see the Island Narcondam: It is high,

(*u*) Fig Island.

(*x*) Or Jan-Celon.

(*y*) The difference found between the English and Dutch charts, in the distance between the Andaman, Cocos and Preparis Islands, and the coast of Tenasserim, engaged me particularly to fix it on these new charts, with greater exactness than is done on either. The frequent voyages of the French company's ships to Mergui, or Pegu, have rendered the means easy. In perusing the journals of this navigation, I observed, that all the mariners had remarked, that this distance, in Peter Goos's chart, is less by 20 or 22 leagues than it should be, and that the English Pilot is more exact.

Upon examination and comparison of the ships tracks, I found the distance from the North point of the Great Andaman to Caboffa Island 94 leagues, instead of 73 in the chart of Peter Goos. The distance of the Cocos and Preparis Islands is laid down conformable to this position, both of them being, as I said before, placed according to their latitude and bearings from the North part of the Great Andaman Island.

The distance of this last from the coast of Coromandel is, according to most navigators, better determined by Peter Goos than in the English Pilot. The tracks of several ships, from their leaving this coast to within sight of Andaman Island, appeared to me to agree perfectly with this opinion; and, notwithstanding the daily difference these navigators have found in this track, between the computed latitudes and the observed, the meridian distance of each, without exception, is found nearly the same, the greatest difference being only 4 leagues in 236. Hence we may infer, that the currents in this place set North and South.

If by adjusting these islands with regard to the coast of Tenasserim, their situation likewise agrees with that of Coromandel; then this conformity evidently proves the certainty of the principle on which I have drawn the 9th chart; wherein I have considered Pondicherry as a standard on one side, and Malacca on the other; and allowed the difference of their meridians  $21^{\circ} 45'$ , agreeable to the astronomical observations made at each place.

Accordingly, the coast of Coromandel, Galconda and Orixá, have been adjusted to the situation of Pondicherry; and by the like method the Island Sumatra, and the coasts of Malay, Quedah, Tenasserim, &c. to Malacca. I thought this way preferable to all those hitherto employed in the construction of sea-charts, as not depending altogether on mariners accounts, which are often too defective to determine exactly great distances.

(*z*) Or rather  $E\frac{1}{2}S$ . for, in the *Boscawen*, Capt. Morris, at the beginning of the year 1763, they had sight of this island, Barren Island, and the Northern part of the Great Andaman, at the same time; and saw one and another of them for 5 or 6 days successively, particularly the island Narcondam bore  $E\frac{1}{2}S$ . when the Northern part of the Great Andaman bore  $N\frac{1}{2}W$ . I conclude from the said ship's journal, that the latitude of the Island Narcondam is  $13^{\circ} 25' N$ . and the N. end of the Great Andaman in  $13^{\circ} 35' N$ . When the Island Narcondam bore NE. and the N. end of the Great Andaman  $WbN\frac{1}{2}N$ . Barren Island bore  $SbE$ . 7 leagues. The variation hereabouts was between  $30'$  and  $40' W$ . In their run from the Northernmost Nicobar, they made Narcondam to bear from thence  $N. 1^{\circ} 49' E$ . dist. 394 miles. And when the island off the N. end of the Great Andaman bore  $\delta WbS$ . to  $SbW$ . 7 leagues, the Southernmost, which is also the Westernmost, of the Cocos Islands, and lies in latitude  $14^{\circ} 01' N$ . bore North.



high, and perceptible 18 leagues at sea. On approaching it, you perceive a little rock, joining almost its South point, and another larger on the East side. This island, in consideration of its small extent, is, as one may say, but a high rock; but appeared safe to those who have been near it.

From Narcondam Island to that of Cabossa, the Westernmost of the Archipelago of Mergui, the course is EbS. distance 67 leagues. As soon as you have lost sight of the former, you get soundings on the coast of Tenasserim, in 60 fathoms. As soon as you have made the Island Cabossa, you may conform yourself to the foregoing directions for sailing to Mergui.

Island  
Cabossa.

When you are within sight of the Cocos, Andaman or Preparis islands, if the winds blow Northerly, the surest way not to miss Mergui, is to make the Moscos Islands in  $13^{\circ} 40' N$ . latitude. They may be seen 10 or 12 leagues at sea. The Southernmost bears WNW. of Tavay point, which forms the East side (a) of the river so called. From this point, the coast, which extends North, as far as  $15^{\circ} 30'$ , is bordered with islands pretty clear of danger, and where, it is said, are convenient places for anchoring. The Southernmost are those of Moscos above mentioned.

Moscos  
or Moscas  
Islands.

South by East of these islands, in  $13^{\circ} 6'$ , lies the North point of Tavay Island, between which and the continent there is an exceeding fine channel, through which you may sail to go to Mergui. It is surrounded on the East side by a bank, the edge whereof lies North and South, encompassing all this part of the coast of Tenasserim, as far as the river Calouan, near Mergui.

Tavay  
Island.

When you have brought the Moscos Islands to bear North, and are desirous of passing this channel, steer SbE. in soundings of mud, and the depth unequal, as 35, 30, 25, 20, and 15 fathoms, then 35 and 25, to within  $1\frac{1}{4}$  league of the North point of Tavay Island; it is best to keep nearer the East coast of this island than the bank above mentioned, because there is less water about it. On the side of Tavay island are four little isles, which you may coast, leaving them to the starboard. You have from 30 to 25 fathoms between the North point of Tavay Island and the rocks; but this depth decreases after they are passed. The tides flow here SE. and NW. or at 9 o'clock; the flood to the Southward, and the ebb to the Northward (b). The sea rises and falls here 3 fathoms.

The South part of Tavay is a number of islands, separated by small channels or arms of the sea, which are imperceptible in coming from the Northward; so that it appears contiguous and united. On the East side is a little round island, called the Canister of the Bank, which points out the brink thereof on that side, like as long Island does about 2 leagues to the Southward.

Off this latter you may see King's-Island Bay to the Southward, towards which you must sail, conforming to the foregoing directions, whether you would go into it, or anchor before Mergui river.

If coming from the Northward, you pass to the Westward of Tavay island, between several great steep rocks, situate along this coast, and the island called the Great Canister; from hence you direct your course to pass between the North point of Iron Island, and the South part of Tavay, as before directed.

If you pass the NE. monsoon at Mergui, on account of its being too early for the coast of Coromandel, your departure should be made about the 15th or 20th of December, in order to arrive there about the beginning of January, when that coast is safe.

I have shewn, in the preceding instructions (c), the course you must take from the road of Mergui, or from the bay of King's Island, to the different passages through which you must go out of this Archipelago; to which I refer the reader, to avoid an unnecessary recital in this place.

If

(a) Rather the West side.

(b) See page 54, where it is said the flood sets to the Northward, and the ebb to the Southward.

(c) Page 57.



From  
Mergui to  
the coast of  
Coromandel  
in the  
NE. mon-  
soons.

If you sail whilst the NE. monsoon is in its height, direct your course from the Island Caboffa to pass between the Islands Preparis and Cocos, or between the last and the North point of the Great Andaman; from thence you may sail towards the coast of Coromandel, with this observation, always to make the land to the Northward of the place bound to. This precaution is the more necessary, because, if you fall into the Southward, you will find it difficult beating up against winds and currents, which are then contrary.

In the  
middle of  
February.

It sometimes happens, that the ships trading to Mergui are not always ready to sail in January; therefore, if necessity obliges them to stay till the middle of February, it will be best going through the channel to the Southward of the Little Andaman, making advantage of the Southerly winds, which at this time blow, out in the bay (d), more than the Northerly ones.

I shall now take notice of the coast to the Southward of Mergui, being what I could gather from the memoirs I have collected.

The coast  
to the  
South-  
ward of  
Mergui.

The whole coast of Tenasserim, from Mergui, as far as  $10^{\circ} 50'$  N. latitude, is encompassed with a number of islands of different sizes, which form several channels, only passable for the small country ships; and 6 or 7 leagues to the Southward of Mergui is another mouth of Tenasserim river, from whence to the Southward the coast is begirt with a bank, containing also many little islands, between which the small country vessels go to Bangry and Junk-Seilon; the largest and most considerable of these islands is called Omell, extending 9 leagues from North to South, the NE. part whereof nearly adjoins to the above-mentioned bank.

Island  
Omell.

Beyond Omell Island they say the coast is navigable, even for large ships, as far as Junk-Seilon, provided care be taken of a bank, situate between the continent and the bordering islands. Although this bank be 3 leagues distant from the former, and thereby affords a good passage between them; yet I think it better to sail without all, where every danger is apparent.

Island  
Junk Sei-  
lon or Jan-  
Celon.

The body of Junk-Seilon Island lies  $8^{\circ} 15'$  North latitude; its shape is irregular, extending from North to South about 18 leagues. On the East side of it are very good harbours, which you may safely put into; food and refreshment being very plentiful, and the inhabitants sociable.

Quedah.

About 45 leagues SE. of Junk-Seilon, you find the port of Quedah, where is a trade for calin (e) and elephants teeth, to export to different parts of the Indies.

I have met with no other description of the coast of Malay than the remarks concerning the navigation of ships passing and repassing the straits of Malacca, which you will find in the instructions following, under that head.

## VOYAGES from the Coast of COROMANDEL to that of MALABAR.

I HAVE observed in the direction for the coasts of Malabar, Canara, &c. that the bad weather, which lasts from April to October, will not permit you to remain there during this interval; but the fine weather opens the trade, and brings thither ships from all parts of the Indies. Those who sail from the coast of Coromandel, Bengal, or any other places more Easterly from the beginning of October to January, should, in order to render their passage shorter and safer, make the Island Zeloan, to the Northward of the Baffes; then keep along the South coast as far as Colombo, from whence cross to Cape Comorin, and make the best of your way to your destined port, conforming to the instructions following.

(d) Of Bengal.

(e) Tutenague.



If in the months of October and November you find to the Southward of the Island Zeloan the winds blow from the West to NNW. you must turn to windward, making advantage of the currents, which frequently set to the Westward very strong. This advantage will be the greater by keeping near the shore.

Rounding Zeloan in October & November.

The time of departing from the coast of Malabar for that of Coromandel, Bengal, or other places to the Eastward, is generally from the month of February to April, keeping along shore as far as Cape Comorin; from thence cross over to Point Gaula, and then direct your course according to the place you are bound for, viz. To coast the island Zeloan as far as Point Pedro, if you are bound to the coast of Coromandel; but if you go directly to Bengal it is sufficient to coast Zeloan as far as the Baffles, from whence you steer to make the coast of Orixá, as I have shewn in the direction for the voyages to Bengal, page 45, &c.

From the coast of Malabar to that of Coromandel, &c.

The ships bound to Malacca pass wide of the Baffles, and cross the Gulph towards the Islands which lie to the Northward of Acheen.

Those bound to Bantam or Batavia, when they are at Point Gaula, should cross over to Sumatra, keeping along the islands that lie off it, and then go through the Straits of Sunda, as I shall explain hereafter more at large, page 109, &c.

The time I have prescribed for ships to sail from the coast of Malabar to different parts of the Indies, is no way relative to those bound for Europe: These should sail in December, or at farthest the middle of January; otherwise they will run the hazard of not doubling the Cape of Good Hope, especially if they are bound first to the Islands of France, or Bourbon.

The best way is to keep along the coast as far as Cape Comorin; then make Point Gaula, and from thence steer SEbS. as far as the Equinoctial-line, to avoid the Maldives, allowing for the currents which set strong to the Westward.

Before I conclude this head, I shall give some directions for a passage that may be gained, in case of necessity, from the coast of Malabar to that of Coromandel, to arrive at the latter end of January. In 1733 and 34 I made a trial of it in the ship *La Galathee*; we attempted it from the example of the squadron of M. le Baron de Paliere, which succeeded very well, in 1704 (f).

You must sail from Mahe, Calicut or Cochin, by the middle of December, or sooner, if the place you depart from be more Northerly, coasting as far as Cape Comorin, &c. as above directed. You have the winds there at this time of the year from NNE. to ENE. with which you must make as much Easting as may be necessary.

It is not always needful to make Sumatra, or to cross the equator: It is sufficient, if on the contrary tack you can fetch to windward of your consigned port.

## DIRECTIONS for sailing to ACHEEN.

THE time of departing from the coast of Coromandel to go to Acheen, is generally limited to the middle of August, or at the latest the middle of September. When you are got out at sea you have the winds from WSW. to SW. which you must take the advantage of, and make the Island Sumatra in 5° North latitude; that is to say, 5 or 6 leagues to the Southward of King's Point, which forms the West side of Acheen Road: Here you commonly meet with Southerly winds, at this time of the year, so that by this means you will be to the windward of the Surat Passage; which, though the narrowest, is however the best, because you can anchor in it.

This

(f) That a passage may be gained this way, is not to be doubted; but care should be taken to provide good ground tackling, and even to quit this coast before the petty monsoon sets in, which generally does about the beginning of April, when it is dangerous lying here, there are no ports for shelter: however, if necessity urges your longer stay, it is best to anchor as far off shore as you conveniently may.



A material observation relating to the currents.

This passage, if undertaken at the time I have prescribed, may be made in 10 days; but if delayed later, the uncertainty of the winds and calms may make it longer.

As to the effect of the currents, I have observed, on examining several journals of this passage, that it is rare to find them set to the Northward; but on the contrary they are often experienced to set to the Southward. Several navigators have found their mistake, by being too confident of the currents setting with the wind. It is safer to compute they set to the Eastward, and prudence advises to be diffident; and either way keep a good look-out in time.

If you make the coast of Sumatra in  $4^{\circ}$  North latitude, you will see in-land several high mountains, and beneath low land, even and very woody, which continues to the shore. Four or five leagues from shore you have 50 fathoms, and all the way good anchoring ground, and no danger about the coast. In sailing to the Northward, in  $4^{\circ} 43' N.$  you perceive the mouth of a river, wherein boats may enter; from thence the coast is bordered with many small islands, low and woody, which may be coasted safely. One league and a half off shore you have 26 fathoms, mud. The charts make a bank opposite these islands, whereof the journals of navigators, who have failed this coast, take no notice: This silence renders dubious the existence of such a bank here (g).

About 5 or 6 leagues to the SE. of King's Point, the low land is equally woody, but of less extent; and like that of the high mountains, very uneven and irregular near the shore. The soundings in this part vary continually; in some places it is sand mixed with mud, in others gravel, and sometimes rocks; so that there is no anchoring here, unless in case of necessity. About 2 leagues from the land you have 35 fathoms.

Surat Passage.

King's Point (b), which makes the South side of the Surat Passage, is not easily known coming from the SE. because at these bearings it appears so contiguous to the islands of Gomez, Nancy, and Brasse, that there is no passage to be seen between them. In ranging the coast, there is (about 2 leagues to the Southward of the Surat Passage) a bight or bay, which you will readily take for a strait; at its SE. point are two rocks above water, on which the sea breaks, and another again within the bay, like a ship at anchor without her masts. In this bay the land is low stocked with trees, and fine sand along the shore. The breadth of this bay is about a league from one point to the other. At the foot of the high mountains near Acheen there appear three small hillocks. Half a league off the SE. point of this bay you have 17 fathoms, fine sand; and a little to the Northward 16 and 15 fathoms; a quarter of a league off the NW. point, there is the same depth at half a gunshot from the shore. Off this place you may perceive King's Point, which appears like a great steep hill. P<sup>o</sup>. Gomez then makes like two paps; its Western point is very low, and at the extremity is seen a little island, from whence it breaks above  $\frac{1}{4}$  a league (i); and about the same distance WbS. of P<sup>o</sup>. Gomez there is another rock (k), whereon the sea also breaks very much. To avoid these dangers, keep King's Point, which is safe, close on board, in 12 and 14 fathoms, red sand; and when you have doubled this point, the opening of the passage discovers itself: Continue on the starboard side till you are got to the narrowest part, then keep mid-channel without fear, and you will soon be through.

[In case of meeting with a contrary wind, you had best anchor under King's Point, and wait 'till the flood has made, which sets NEbE. and the ebb SWbW. At about  $\frac{1}{4}$  flood, weigh, and lay her head to the Northward (l); so you will have the tide under your lee bow; and thus, by backing and filling you may not only get through the Surat Passage very safely, but to the anchoring place.]

You

(g) That there is such a bank, I have been assured by Capt. Griffin, of the Lapwing, who, in December, 1764, anchored upon it in 6 fathoms, and sent his boat to sound all over it: The least water was, mark under water 3 fathoms, and the most 7 fathoms. There is 17 fathoms both within and without it. The length of it is about 1 mile, and its breadth 3 or 4 cables-length: Lying in lat.  $4^{\circ} 55' N.$

(b) The latitude of King's Point, as observed on board the Lapwing, by 4 Hadley's quadrants, is  $5^{\circ} 32' N.$

(i) Extending to the WSW. as mentioned in the Paragraph describing the Sedre Passage, in the following page.

(k) It is dangerous going between these two, as in all probability there is a communication from one to the other.

(l) In the Lapwing, December, 1764, the captain nor any of his officers having been here before, and, no caution given in the former editions in case of contrary winds, they laid her head to the Southward; but as soon as they had got clear through the passage, they met with such a confused sea, occasioned by the meeting of the several tides, from the different passages, that it broke through the cabin windows, and over the deck fore and aft, and the vessel lost all command of the helm; so that they were forced to put back again, and wait for the next flood: In the mean time, Capt. Griffin went in the boat to discover the occasion, and when he made sail next, he laid her head to the Northward, by which means they got to the anchoring place, without the least difficulty or danger.



You sometimes meet with contrary tides, which set very strong out of the bay of Acheen; but if you have not wind enough to stem it, anchor (till it has slackened) before you get to the entrance.

From Surat Passage the course is EbN. 2 leagues to the anchorage of Acheen. About  $\frac{1}{2}$  a league from the coast of Sumatra there is a little island, surrounded with breakers: You may anchor before the river in what depth you please. There are always some ships in this road, therefore there is no occasion for more particular directions. Half a league off shore you have 12 fathoms, and 7 fathoms about  $\frac{1}{4}$  of a league.

The second passage to enter Acheen Bay is that of Sedre: The Island Nancy makes the North side of it; P°. Gomez and Stone Island the South.—Though the Surat Passage is preferable, this however is less to be feared than some charts represent. There is nothing dangerous but the rocky bank that extends WSW. from P°. Gomez above mentioned, and another from P°. Nancy about mid-channel (*m*). Sedre Passage.

It has been said that no accident ever happened to any ships sailing through the Surat Passage; though several navigators have questioned this, on account of its being so very narrow, and have rather chose to sail to the Northward of P°. Brasse, through the Bengal Passage, between P°. Vay (*n*), and Brasse and Nancy. This latter, which is 4 leagues wide, would be preferable to either of the other two, if from thence there was an easy passage to the road of Acheen; but the winds, which generally blow between SSW. and South, do not always permit it; and as there is no anchoring there, on account of its great depth, if a calm should happen, you are tossed about by the currents, which set to the N. Eastward; and you run a risque of not reaching Acheen; and if you do, not without much difficulty. Several ships having been horsed near P°. Way, where there is no anchorage, have been obliged to sail round about, and re-enter at the Malacca Passage, after more than 15 days hindrance. Bengal Passage.

Frequent examples of the like inconveniences deserve the regard of those who have the charge of ships, and should determine them always to prefer the most experienced method, and not give way to chimerical fears.

The third passage to Acheen is that of Malacca, so called because the ships which go from Acheen to Malacca generally pass through it. This passage is bounded on the NW. by the South point of P°. Way, and on the SE. by that of Sumatra. You find here a little round island (*o*) or rock above water; but it is steep to, and the passage steep on all sides. It is 3 leagues NE. from Acheen Road. Malacca Passage.

NNW. 3 leagues from the NW. part of P°. Way, there is an island called P°. Ronde (*p*), on account of its form, and within  $\frac{1}{4}$  of a league to the Southward thereof are seven or eight great rocks above water. To the Northward of P°. Brasse are also three little islands, the outermost of which is above  $\frac{1}{2}$  a league therefrom.

The trade of Acheen is very considerable; ships come hither from most parts of the Indies, particularly on account of the gold, whereof they procure great quantities; the hazard of being paid is the only difficulty of this traffick. The town is situate upon a low ground, which continues from the foot of the mountains that are seen in-land. Acheen River passes through this plain, and makes thereof several islands. In the rainy seasons the low lands are almost all overflowed. The principal mouth or entrance of the river has a bar, over which small vessels of about 25 or 30 tons may pass at high water; but at low water a boat or canoe can scarce get over. The Portuguese and English had, each of them formerly a settlement at Acheen, which the perverse behaviour of the inhabitants caused them to forsake. Acheen.

The sea rises and falls 7 feet in the road, and it is high water at 9 o'clock on the full and change; but the sea breezes and rains make considerable alterations, and render this rule sometimes Acheen Road.

(*m*) There is also the rock before mentioned, bearing WbS. from P°. Gomez.

(*n*) Or Way.

(*o*) P°. Boura or Malora.

(*p*) Or Roundo.



times invalid: You are here sheltered from the Westerly monsoon, which is the strongest, and blows from April to November; when the Eastern monsoon sets in, and brings with it more moderate winds, except those now and then from the NW. which blow very violently, and oblige the ships to have good anchors and cables to withstand their force.

Queen's  
Mt. or the  
Golden  
Mount.

The in-land parts of Sumatra, hereabouts, are very mountainous, among which is one very high, and may be seen 20 leagues at sea: It is called Queen's Mountain, and by the English Golden Mountain.

The ships bound for Europe, which on their return from Acheen are to touch on the coast of Coromandel, should depart hence by the 20th or 22d of December, in order to arrive there at the beginning of January. Having made sail to go through the Bengal Passage, they shape a course towards Nicobar Island, which lies NWbW. of P<sup>r</sup>. Roundo, distant 28 leagues.

This island may be seen 10 leagues at sea, though its South point is low. There is no occasion to go through St George's Channel, it is sufficient to go to the Southward thereof, and when you have passed it keep on your proper course to bring you to your consigned port. It must be observed, what I said before in the article of Mergui (g), to make the land at this season to the Northward of the port, in order to get thither the easier and sooner. You must also have regard to the currents setting to the Westward, which otherwise may occasion your falling in with the land sooner than you are aware of.

As for those ships whose business detains them longer at Acheen, and which seldom sail sooner than March or April, their course is different: The S. and SSW. winds, which blow then in the bay of Bengal, and the currents, which set to the Northward, require them to make the land to the Southward of the place they are bound for. You will easily account for this difference, without my entering into a longer detail thereof.

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### *Of the WEST COAST of the Island SUMATRA.*

**A**FTER the description I have given of the NW. point of Sumatra, and the Islands about it, it may not be amiss to add some directions for the West coast, which extends as far as the straits of Sunda. To inform navigators, who are obliged to frequent these parts, of the shoals to be met with, and point out the courses they must steer to avoid them, and bring them to the ports they are bound to, requires a very particular description; but after many enquiries, I have only procured, on this subject, some accounts too superficial to answer my purpose, and not correct enough to appear in this collection, upon the principle I had resolved on, to reject every uncertain intelligence, or such as appeared to me to want probability.

In the fifth chapter of the English Pilot you meet with two instructions concerning this part; the first (r) "going from Acheen to Priaman;" the second (s) under the title of "A Description of the West coast of Sumatra, from the Straits of Sunda to Acheen, coming from the Southward."

Both of these might probably be plain to the author; but I question whether any navigator can make use of them, or reconcile them with those particular charts the Dutch have caused to be made of this coast. One look is sufficient to verify what I have advanced.

This only may be depended on, that the islands, which lie off Sumatra, are laid down according to their true latitude, and that they may be coasted at 4 leagues distance without danger. This circumstance, although little availing those ships who trade along the West coast of Sumatra, within the islands, is notwithstanding material for those who sail without, especially when, to make advantage of the winds, they are obliged to coast them, whether going from the straits of Sunda to the coast of Coromandel or Bengal, or coming from thence.

*For further particulars of the West coast of Sumatra, see the Appendix, page 138, &c.*

DIRECTORY

(g) Page 60. Be pleased to observe likewise the Note (f) in page 61.

(r) English Pilot, page 47.

(s) English Pilot, page 48.



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**DIRECTIONS for sailing to MALACCA, from the Westward, in the WESTERLY MONSOONS.**

**I**F you are bound to Malac or Malacca, in this monsoon, when the winds throughout the gulf of Bengal blow from the Southward, and the currents set to the Northward, the best course you can take, whether from the coast of Coromandel, or from Point Gaula in the Island Zeloan, is to make the Acheen Islands; keeping as much as possible in the latitude of  $5^{\circ}30'$  or  $40'$ ; or  $5^{\circ}$  if you intend to put in at Acheen (1): But otherwise you must pass by the little islands or rocks to the Northward of P°. Brassa, and continue your course through an exceeding fine channel, between the North point of P°. Way, and the rocks  $\frac{1}{4}$  of a league to the Southward of P°. Roundo.

Having doubled P°. Way, you proceed towards that part of the coast of Sumatra, between the NE. point of Acheen and Tanjong Goere, or Diamond Point, lying about EbS. or ESE. 40 leagues.

During this season it is rare to find settled weather, so as to make a direct course. The wind hereabouts is very variable, and frequently blows from SSE. to ESE. in violent squalls, which by withstanding their fury would drive you ashore, especially in a large ship. Navigators should be greatly on their guard throughout this whole strait, and anchor in time, to avoid being driven off the coast, so as to be unable to recover it easily. Sometimes also 'tis necessary, to avoid any particular danger, to keep off the coast, when the wind blows thereon. This premised, once for all, relates in general to the rest of the strait.

Important remark on the storms called Sumatras.

This part of Sumatra, between the Easternmost point of Acheen Road and Diamond Point, is very high land up in the country; but there is some low land by the sea-side. When you are about half way, you must not, if possible, keep above 4 or 5 leagues off shore, and in soundings of 25 or 30 fathoms (u), so as to be able to anchor in case of a calm, or contrary tide; for you often meet with currents setting to the Northward with great rapidity. Before you come to Diamond Point there is a large mountain called the Elephant, which is about 9 leagues (x) from the point.

Diamond Point is low, and encompassed with dangers; to avoid which, you must come no nearer it than  $3\frac{1}{2}$  or 4 leagues. From hence the coast of Sumatra extends SEbS. and is only to be discovered by the trees which are upon it. The soundings, 2 or 3 leagues off at sea, are very unequal, which may intimidate those who look for regular depths, or proportioned to the distance they are off shore. At 5 leagues distance you have 35 and 30 fathoms, and in some parts 25 and 20.

Having doubled Diamond Point, you sail along the coast of Sumatra, towards the Island I. Varella, which is separated therefrom about 8 leagues, and bears from Diamond Point about  $48^{\circ}$  E. distance 30 leagues. Its latitude, according to several observations, has been determined

I. Varella, or P° Verura.

(1) Capt. Griffin, in the Lapwing, observed, off King's Point, which is the N. Westernmost part of Sumatra, and makes it to lie in  $30^{\circ}$  N. In the charts, it is laid down in no more than  $5^{\circ}20'$ ; so that very probably the Islands encompassing Acheen are laid down accordingly, of which I would desire the ingenious navigator to be aware.

(u) Some who have been on this coast remark, that there are no soundings above a mile off this coast, with 100 F. especially 'till you come near the Elephant Mountain: Others say 2 or 3 miles; and it must be confessed the distance of such high land is very deceiving: However, it has been proved, by experience, that ships make a much quicker passage, by falling in with P° Perah, and standing over to the Malay shore, which is now generally, if not wholly, practised.

(x) Some say 14 leagues; and that between the Elephant and Diamond Point there is about 30 F. at 4 or 5 leagues distance; but whether off it deepens again to 50 F. and then presently off the bank. The latitude of Diamond Point is  $4^{\circ}54'$  N.



mined (y)  $3^{\circ} 48'$ , and not  $3^{\circ} 5'$  as some represent it. It is evident, independent of the observation, that this last cannot be true, on account of its distance from Diamond Point.

The tides between these two places flow nearly EbN. and WbS. that is to say,  $\frac{1}{2}$  after 5 o'clock. The flood is here more rapid (z) than the ebb, and runs SEbE.

P<sup>o</sup>. Varella (a) may be about two leagues in circumference: It is high, woody, very clear, and bold, excepting some sandy bays, the largest of which lies to the SE. You may anchor before this island in 12 fathoms, where you may also take in fresh water (b). Some ships have taken turtle here in the night-time, and the fishermen frequent it to dry their nets. There is a little rock or island off the NE. point (c), and another to the Southward.

To make advantage of the wind, you generally pass between P<sup>o</sup>. Varella and the coast of Sumatra. There is no danger in failing between them, the bank marked in the charts having 8 or 9 fathoms water on it (d), besides which there are others within 3 leagues of the shore, so that it is necessary to keep sounding.

P<sup>o</sup>. Jarra. Eighteen leagues B<sup>o</sup>N. from P<sup>o</sup>. Varella you meet with P<sup>o</sup>. Jarra, (e) a small high island, and steep to, which is generally made in turning it up this strait.

The Two Brothers. When you have passed P<sup>o</sup>. Varella steer towards the Two Brothers, which are two little islands, bearing NE. and SW. about 2 leagues one from the other. The Northernmost lies SEbS. 9 leagues from P<sup>o</sup>. Varella. You pass to the Eastward of these islands, near which you have 29 or 30 fathoms. There is no need to pass between them and Sumatra, besides it is reported there is shoal water.

Islands of Aru. From the Two Brothers, shape your course towards the Islands Aru or Aron EbS. about 24 leagues, in irregular soundings, as from 35 to 50, 40, and in some places 60 fathoms. These are several islands (f), encompassed with rocks above and under water, especially on the West side. They may be seen 8 or 9 leagues, the largest (g) of them is about  $2\frac{1}{2}$  leagues in circumference. Come no nearer than  $1\frac{1}{2}$  league, lest the ebb tide horse you among them, and into dangers, Jumar.

(y) Capt. Gilbert Slater, of the Triton, by an accurate observation with Hadley's quadrant, makes it in  $3^{\circ} 55'$ ; and probably the  $3^{\circ} 5'$  our Author here takes notice of, may have been an error of the copyist; and this I am the rather inclined to think is the case, as I have frequently met with the like blunders, in comparing different copies of the same remarks, journals, &c. Nay of this very part, some  $3^{\circ} 4'$  and others  $3^{\circ} 55'$ . This heedlessness not only renders these remarks useless, but very dangerous; for if the bearings, distance, latitude, soundings, &c. are not very correctly copied, and re-examined, they may lead both hydrographers and navigators into great mistakes, which may prove fatal in the end. These being generally recommended as certain rules and sure guides (as perhaps the originals might be) are accordingly relied on as such, and thereby the more deceive, or at the best very much perplex and confound: And all this for want of care in copying or revising it, by one person's distinctly reading over the copy, while the navigator himself, at the same time, attentively compares it with the original; and by his signifying such examination at the end thereof, gives it authority for others to copy from. Some, again, make alterations, judging the author certainly mistaken; perhaps it may be so, nevertheless, 'tis better to give your own sentiments in a marginal note, if you cannot consult the author, and first have his reasons pro or con.

(z) Capt. Mackintosh says, in his remarks on six voyages through these straits, viz. Three on the Sumatra coast, and three on the Malay. That "from the NE. point of Sumatra to Diamond Point there is generally a NW. current, especially when the wind blows fresh or West; but at Diamond Point begins the tides, where it flows full and change NEbN. or  $\frac{1}{2}$  after 2 o'clock; but the ebb tide sets out much longer and stronger to the NW. than the flood to the SE." And indeed this appears more consistent with the account above of the contrary tides, and often meeting with currents setting to the Northward with great rapidity.

(a) I need acquaint but few mariners, who frequent this navigation, that P<sup>o</sup>. Jarra, or its contraction P<sup>o</sup>. signifies an island, in the Malay language.

(b) On the South side of this island is a small bay, where you may anchor in 18 or 20 fathoms about a mile off shore, and fill water, which runs down a hill into a small well, but very slow.

(c) Rather NW. according to the various bearings of ships, particularly the Catherina, an English country ship, which watered here in 1747. N. B. They took arms in the boat with them; but I do not find they had any occasion to use them.

(d) There is also a bank, from which P<sup>o</sup>. Varella bears from EbS. to ESE. 9 or 10 leagues, whereon there is 9 or 10 fathoms, about 4 leagues from the Sumatra shore. Also another of 7 f. grey sand, the island bearing SSE. about 3 leagues. Towards the island it deepens gradually from 10 to 15 f. Likewise another to the NE. 8 miles off the island, at the NW. end of P<sup>o</sup>. Verura, with only 2 f. on it. When P<sup>o</sup>. Verura bears SbE. 3 leagues, you may see the breakers on it, and are then abreast of it.

(e) Capt. Slater observed its latitude, with Hadley's quadrant,  $3^{\circ} 56' N$ .

(f) They are in two clusters, and distinguished by the Great and Little Arroes: The Little Arroes, or the Westernmost cluster, which are more particularly called by some P<sup>o</sup>. Jumar, are seldom seen in keeping the new track, along the Malay shore. Of the Great Arroes, the Easternmost or round Arroe is the leading mark for the channel, between the North and South Sands. N. B. There are two remarkable rocks, with breakers round them; one NE. about 4 miles from the Great Arroe, which is not to be seen far at high water, the other lies NE. from the Long Arroe.

(g) Commonly called the Long Arroe, which Capt. Ch. Haggis in the Prince Henry, by a very good obs. makes to lie in lat.  $2^{\circ} 58' N$ .



dangers. There is water enough round about, but the depth very irregular, as is also the quality of the soundings.

The Islands of Aru are situate in  $2^{\circ} 49'$  of N. latitude, according to several observations which have been made near them. The old charts fix them in  $3^{\circ} 4'$  or  $5'$ , which is  $15'$  more than they really are.

As you are generally obliged to turn it hereabouts, you must make the best advantage you can of the tides, and be very cautious, in standing towards the Malay shore, to beware of the bank which lies off it; the shoalest part of which is covered with rocks, whereon the sea breaks (b), and other parts of it, have but 2 or 3 fathoms water. It may be considered as the most dangerous in these straits, and should not be approached nearer than 14 or 15 fathoms. Soundings of oaze are not always a certain proof of distance from its verge, because there is, even upon this very bank, soundings of this sort, clear and greenish, which would deceive any one who trusts to them. The South point of this bank forms the North side of the channel, through which you cross from the Islands of Aru to P. Parcelar, for which reason some call it the North Sand. At low water, there is not above 9 feet water.

Remarks  
on the  
bank NW.  
of M. Par-  
celar, or  
the North  
Sand.

To the Southward of this bank, on the other side of this same channel, is another, to which the charts (c) ascribe 10 or 12 fathoms water. This gives us reason to believe that the approaches towards it are not dangerous; and navigators, who have worked through this passage, and passed over it, have assured me of this, and that it must be distinguished from the channel, because the bottom of it is very hard sand, and not proper for anchorage. However, several experienced pilots of this channel are not of this opinion; and affirm, that there are very dangerous inequalities, wherefore you must beware. I had proof of this from the journal of a skilful navigator, and therefore I think the surest way is to follow the opinion of these last, as well for this bank, as the others to the S. Eastward of it, for it seems as if the passage between their extremities are not thoroughly known.

Remarks  
on the  
bank  
WSW.  
or the  
South  
Sand.

From the Islands of Aru, to the low land to the Westward of Mount Parcelar, is reckoned 17 leagues (k) EbS. This last is a remarkable hill by itself, with low land all covered with trees round about it: It serves as a mark to pass between the banks above mentioned. Here follows the course you must steer:

Low Land  
of Mount  
Parcelar.

In coming from the Northward, or from the NW. after passing the Islands of Aru, when the largest bears SW. 3 or 4 leagues, you must steer EbS. (l), taking especial care of the tides, which are here very rapid. It flows here about 10 hours on the full and change; the flood to the

(b) I have never yet met with any account that makes the sea to break on this shoal. If it does, I believe it must be only at low water, neap tides, or very blowing weather, 2 fathoms being the least water, I ever heard of, on it. For a very particular and circumstantial account of this passage, from the Arroes to P. Parcelar, see Nicholson's Rem. and Obs. p. 70 and 93.

(c) I know not what charts our author may have seen or taken his from, which make 10 or 12 fathoms on this sand; but most of what I have (which are not a few, Dutch and Portuguese, ancient and modern) make no more than 3 fathoms thereon; indeed a Portuguese one, done in 1687, has 3 fathoms on the South part, and 7 or 8 at the North end; and a Dutch one, which seems to have been mostly copied therefrom, has 2 or 3 fathoms on the Southernmost part, and 6 or 7 on the Northernmost; but, however irregular the soundings may be on the bank, it is certain there are some places at the North end thereof, which have no more than 3 fathoms. And, although this bank may be, and I believe is, the best to keep on, yet it must be approached with care; for the ship Montfort, in passing between these sands, lost her pinnacle a-head to ground, which some time after made signal for shoaling, from 22 to 6 fathoms, on which the ship anchored, in 16 fathoms, (and sent to the SE. to sound upon the bank, and found 3 fathoms) Parcelar hill  $E\frac{1}{2}N$ . the low land just in sight from the poop; and though perhaps there may be some error in the bearings of Parcelar, yet this makes it evident, it is dangerous being too free with the South-Sand head: Besides, several others have shoaled to 6 or 7 fathoms, particularly Capt. Timothy Tully, in the ship Royal George, in 1732, in his passage fell from 23 to 16, 12, 9, 10, 7,  $6\frac{1}{2}$ , and then anchored; at daylight found he had very good bearings, viz. Parcelar  $E\frac{1}{2}N$ . 12 leagues; and the Little (or Round) Arroes West 7 leagues, so that his anxiety was over, but thought it rare to find so little water with these bearings and distance; he immediately weighed and steered ENE. and had a few casts at  $6\frac{1}{2}$ , 7, 8, 10, 17 to 21 fathoms, and then anchored again, being calm.

(d) The Round Arroes and Mount Parcelar, which are the leading marks, do not bear above  $W\frac{1}{4}N$ . and  $E\frac{1}{4}S$ . as may be demonstrated by the bearings of each at the same time.

(l) I would caution all persons against this advice, as all my memoirs and instructions for this part declare against bringing Parcelar to the Southward of  $E\frac{1}{4}S$ . but Capt. Thorp expressly says, "If you have Parcelar hill  $E\frac{1}{4}S$ . and the low land in sight off deck, you will be near a bank of foul ground, about a quarter of a mile long. I anchored on it in 8 fathoms, bearings as above; I sounded and found coral rocks  $2\frac{1}{2}$  fathoms, but all round it 7 and 9 fathoms."



the ESE.  $7\frac{1}{2}$  hours, and the ebb to the WNW. This rule, though variable, may be looked upon as general. In this track you have unequal depths, as 40, 35 and 25 fathoms, mud.

Mount  
Parcelar.

When the Island Aru bears EbN. (m) about 6 leagues, you may see Mount Parcelar E $\frac{1}{2}$ S. It is best to keep it in this direction, without bringing it to bear more Southerly, and steer accordingly: Then you have uneven soundings in 20, 18 and 15 fathoms, and keep at a proper distance from the South point of the North bank, which is most to be feared. If by any accident you get into 10 fathoms, and Mount Parcelar bears to the Southward of E $\frac{1}{2}$ S. as may happen by the shifting of the tide, then stand to the Southward to regain the channel.

You must also take care of the Southern bank: It is not proper to approach it, in a direction wherein Mount Parcelar bears to the Northward (n) of East. If the depth decreases, or the quality of the soundings presage some danger on that side, you must keep off its verge, by edging to the Northward.

What I have said plainly shews, that it is imprudent to sail between these banks, without seeing Mount Parcelar, which, for this purpose, is a sure mark to prevent danger. Experienced navigators will take suitable measures, when the darkness of the night or hazy weather obscures the sight of it.

Having doubled the banks, you must continue to steer E $\frac{1}{2}$ S. 'till within a league and a half of the low land; then sail along shore as far as C. Rachada.

Cape  
Rachada.

It is 12 leagues SE. from the low point WSW. of Mount Parcelar, to Cape Rachada. The coast between them is low and woody, forming a bay, which I caution not to enter. Cape Rachada is a high steep hill, sloping to a point towards the sea, which makes like an island, when you first see it, coming from the N. Westward; being situate on low land, which for some time is not seen. About 4 leagues off this coast is the verge of the bank above mentioned, which lies SE. and NW. and bounds the passage on that side; the soundings along which are very unequal: You have generally between 18 and 25 fathoms along shore, and 30 and 35 on the bank-side, which is counted very dangerous, on account of its steepness. The tides in this part run SE. and NW. very rapid, especially in the springs.

Four leagues to the Northward (o) of Cape Rachada, and SEbS. of Mount Parcelar, and about a league off shore, there is a shoal, upon which a Dutch ship was lost, in 1701: As soon as you are past it you may see a little island, with breakers round it, bearing ESE. Adjoining Cape Rachada is another reef of rocks, extending  $\frac{1}{4}$  of a league to the N. Westward. From Mount Parcelar to this cape you must keep, at least,  $1\frac{1}{2}$  league off shore; and even, for safety, farther off, to round the bank (p) above mentioned; and having doubled it, you steer a course to go about  $\frac{1}{4}$  of a league without the cape, off which the depth is irregular, from 15 to 30 fathoms.

If contrary winds oblige you to turn it, you must be cautious of standing too near the coast on the one hand, and the bank lying off it, on the other, according to the instructions above given.

As soon as you are off Cape Rachada you may see the coast of Sumatra bearing SSW. It appears low and woody.

Malac or  
Malaoca.

Malacca is 9 or 10 leagues ESE. from Cape Rachada: The coast between them forms several bays, and there are to be seen several rivers mouths. You must not go too near shore, on account

(m) Rather WbN.

(n) Our author, as he allowed too much scope on the North Sand-head, so seems to be too crimping on this; but this is a fault on the right side the question; so that by steering with Parcelar due East there is nothing to fear. However, that navigators may not be needlessly frightened at altering their bearings, Capt. Tully, whose judgement and experience of these parts is well known, says you may go clear of these sands by keeping Parcelar between E $\frac{1}{2}$ N. and E $\frac{1}{2}$ S. These are the utmost bounds of danger I ever met with, even supposing Montfort's bearing right.—See my second note in page 67.

(o) Rather N. Westward.

(p) Parcelar hill NNW. or Cape Rachada ESE $\frac{1}{2}$ S. will carry you 2 or 3 miles without it, in 16, 17 and 20 fathoms.



account of the rocks, which lie along this coast. When you have doubled Cape Rachada, steer SEbE. and you will soon see the fort of Malacca.

On this side of Malacca there is a little island, covered with trees, called Fisher's (q) Island. Fisher's  
or Lead I. You pass it, about 2 miles, to anchor in the road of Malacca, in what depth you think proper; the church, or the hill, NEbE. You have 7 fathoms a league from the town. The tides flow in this road at  $\frac{1}{2}$  past 10 o'clock, full and change: The flood to the ESE. and the ebb WNW. pretty strong, especially in the springs.

Before you come to Malacca you see, at some distance from the shore, several small islands, Water  
Islands. called Water Islands, the Southernmost of which bears SEbS. 4 leagues from the road.

This town lies in  $2^{\circ} 12'$  North latitude, and  $99^{\circ} 45'$  East of the Royal Observatory at Paris: It has been famous ever since the discovery of the Indies. The Portuguese made a conquest of it in 1511, and kept it till 1641, when the Dutch took it from them, after 6 months siege: They possess it still, and have made it their chief settlement on the Peninsula of Malaya. Malacca gives name to the strait between the coast of Malaya and the NE. side of the Island Sumatra. It is through this strait one passes from the Indian Sea to the Gulf of Siam, China, the Philippine and Molucca Islands; so that this town, in the middle of this strait, is one of the most trading towns in the Indies.

When you go ashore, with your boats, keep the fort well open to the starboard, 'till you have the river open between the fort and the houses; then steer directly in for the river, that being the deepest channel: The landing-place is on the larboard shore, as soon as you enter the river, about two stones throw short of the bridge. On landing it is customary to wait on the Shalander, whose house is just by; and he sends to the Governor, to know if he is at leisure to receive you; when you wait on him, some present is expected by them both. Here is nothing to be had, for the people, but old buffalo. The English pay 26 per cent. duty on all trade. Be guarded against impositions.

Before I proceed to give instructions for the rest of the strait, I shall treat of the voyages that are made to Malacca during the Eastern monsoon, as they require a different management.

## OF VOYAGES to MALACCA, in the EASTERLY MONSOONS.

THE passage from the coast of Coromandel to Malacca, at this season, is liable to great difficulties, especially from Madras, Pondicherry, or other places more to the Southward; by reason of the winds (throughout the whole bay of Bengal) then blowing from NNE. ENE. and the currents running to the Southward, afford no hopes of success: But for those who sail from Masulipatam, or any other part of this coast more to the Northward, and from Bengal, these directions are particularly adapted: They may likewise be useful to those who are bound to Malacca, from Point Gaula, Pondicherry, or Madras, about the end of the Western monsoon, when the calms and shuffling winds will retard their arriving on the East coast of the Bay, before the setting-in of the Easterly monsoon, at which time, if they conform to these instructions, they will shorten their passage and render it more safe.

In sailing from Bengal to Malacca, in the Easterly monsoon, the track from the shoals off the mouth of the Ganges, is to make the Western coast of the Great Negraile, and if, by any unforeseen error in your reckoning, you should make the land to the Northward, have a care of the little island called the Buffalo, which lies off the coast of Ava, in  $17^{\circ} 6' N.$  and is described in page 47.

When

(q) Or Lead Island.  
A a



When you are within sight of Negraile Island, it will be necessary to keep close along the West coast, to luff up to the South point, and then bear away, so as to pass a league and a half to the Southward of Diamond Island, and thereby avoid the Negada or Sunken Island, and the rock (r) between them: but for greater surety it will be proper to bring Diamond Island to bear NWbN. 4 or 5 leagues before you stand to the Southward.

To make the most advantage of the wind, and avoid the consequence of the currents, which set to the Westward; on leaving Diamond Island, endeavour to make the Islands Cabossa, Tenasserim, or those of Tores, which are the Westernmost of the Archipelago of Mergui. These islands are very high, and may be seen far off at sea; besides, by the soundings about them, you may form a judgement of their distance.

From these islands, steer SbE. to go clear of those along the South part of the coast of Tenasserim; they are clear and without danger, or at least any that is visible.

The old charts, both manuscript and printed, lay down two islands in  $9^{\circ} 45'$  and  $50' N.$  latitude, about 30 leagues to the Westward of those of St Matthew; and though the different journals and memoirs I have examined, make no mention thereof, yet I thought it proper not to omit them in these new charts. The uncertainty of their true situation deserves the attention of those whom it may concern.

Seyer  
Islands.

Po. Buton  
or Bouton.

Po. Pera,  
Parra or  
Parah.

In  $8^{\circ} 30'$  North latitude, and 13 or 14 leagues East of Junk-Seilon (s) Island, lie the islands of Seyer, which may be seen 6 or 7 leagues off: You leave them on the larboard, and from thence steer SE. to make P<sup>o</sup>. Buton, which lies 27 or 28 leagues SSE. from the South point of Junk-Seilon, and in the latitude of  $6^{\circ} 35' N.$  P<sup>o</sup>. Buton is not the only island to be seen; all the coast of Queda is encompassed with several others of different sizes, and very high; that of Ladda is the most considerable, to the Eastward of which lies the port of Queda, very much frequented by the Malayes and other Indian nations, whom trade brings thither.

From P<sup>o</sup>. Buton to P<sup>o</sup>. Pera the course is SbW. 18 leagues: This last is a little round island, steep to, covered with trees, and about  $1\frac{1}{2}$  league in circumference: It is clear all round, and may be approached with safety: Its situation almost in the middle of the entrance of the straits of Malacca; being by itself, and out of sight of the coast and the adjacent islands, makes it easily known; and is a mark to the ships that come in, or go out of this strait.

P<sup>o</sup>. Pera is laid down in the old charts  $15'$  more Northerly than it should be: This error is amended by authority of several journals of this navigation; comparing several observations of the latitude made round it, I have placed it in  $5^{\circ} 39'$  North. As to its distance from P<sup>o</sup>. Ronda and the Malay coast, it is also conformable to the opinion of most navigators.

Round about P<sup>o</sup>. Pera you have 60, 50, and 40 fathoms. In crossing from this island towards Diamond Point, or Tanjong Goere, at 27 leagues distance SEbE. you have the soundings much the same.

Po Pinang.

Having had sight of P<sup>o</sup>. Pera, leave it to the starboard, and stand towards P<sup>o</sup>. Pinang, bearing EbS. 18 leagues from the former, and 3 leagues from the Malay coast; between them there is a channel, through which the country vessels trading along this coast usually pass (t). P<sup>o</sup>. Pinang is about 4 leagues long, North and South; the middle is high, its South point low, and upon its North point is a round hillock, which makes it easily known. The Western coast of this island forms a bight or bay with a sandy shore. Near the South point of this bay there is an island, upon which may be found very good water.

Po. Sam-  
belang  
rather Po.  
Dinding.

From P<sup>o</sup>. Pinang, S26°E. 22 leagues, lies P<sup>o</sup>. Sambelang (u): Between them it is shoal on the coast of Malay: This bank projects out 3 leagues, and even 4 in some places: Those who sail from one to the other with a fair wind, should keep in 20 or 25 fathoms; but if you are

(r) An account of which you have in page 46.

(s) Or Jan-Celon.

(t) To Queda.

(u) Our author lies under a great mistake here: for this island, which he calls Sambelang, is in fact P<sup>o</sup>. Dinding, and those other islands he mentions as lying to the Southward are the true Sambelangs; Sambelang signifying Nine in the Malay language.



are obliged to turn it, take care to come no nearer the bank than 10 fathoms, mud. Sambelang Island (x) extends about  $3\frac{1}{2}$  leagues North and South: Its land is high, and forms 3 or 4 mountains contiguous. The Dutch have here a fort, for the security of their trade to the adjacent parts. South and SbE. are several others (y) of different sizes; the Southernmost is 6 or 7 leagues distant from this.

To the Westward of this last, at the distance of 7 or 8 leagues, is a little sugar-loaf island, covered with trees, called P°. Jara, which I mentioned in page 66. You may pass between this island, and those above-mentioned (z); in 25, 28 and 30 fathoms, mud. There is no danger in this passage. P°. Jara  
or Jarra.

From P°. Jara to the islands of Auore, the course is S24°E. distance 22 or 23 leagues. Having passed the former, sailing mid-channel, between that and the islands which lie to the Southward of P°. Sambelang (a), you must steer SbE. allowing for the tides, which set sometimes towards the Malay coast, from which you must keep, especially about the islands of Auore, on account of several very dangerous banks opposite to them. If a contrary wind obliges you to turn it, it will be prudent to keep the lead going; and come no nearer these banks than 16 or 17 fathom: Farther out, the depth is irregular, in 30, 35 and 40 fathoms.

When you are  $1\frac{1}{2}$  or two leagues past the Auore Islands, steer towards Parcelar, observing the directions in the 67th and following page, as far as to Malacca.

It is sufficient, at present, to give the navigator some instructions for sailing at this season from other places besides Bengal, towards Malacca.

Those who sail from Masulipatam, or any other place on the coasts of Golconda and Orissa, in the months of January and February, have no occasion to make Negraile; it is then sufficient to cross over to the Eastern coast, between the Preparis and Cocos Islands, or between these and the North point of the Great Andaman Islands. From laying these islands, they must shape a course to get sight of P°. Buton or P°. Pera, and follow the preceding directions.

As for those who sail from Point Gaula on the Island Zeloan, Pondicherry, or Madras, for Malacca, about the end of the Western monsoon, they may make the Little Andamans, going through the channel on the South side thereof, or that of Sombrere, if you cannot reach the former: From thence sail towards the coast of Queda, to fall in with P°. Buton or P°. Pera as above.



### *The Return from MALACCA to the Coast of COROMANDEL, BENGAL, and other Western Parts, at different Seasons of the Year.*

HAVING treated of the voyages to Malacca, during the Eastern and Western monsoons, from different places situate to the Westward; I shall, in the same order, give instructions to those who embark at Malacca, bound to any of those places.

The bad weather, which prevails on the coast of Coromandel and Golconda, during the months of November and December, makes it unsafe for ships to arrive there then; so that they are obliged

(x) See Note (u) page 70.

(y) These are the true Sambelangs or Nine Islands.

(z) The true Sambelangs.

(a) Or rather the true Sambelangs.



In the  
Easterly  
monsoons.

obliged to wait at Malacca 'till the 10th of December, which is the proper time to undertake this voyage with safety.

Having doubled Fisher's Island, which forms the West side of the road, you steer towards Cape Rachada, and thence to the low point, off Mount Parcelar, with a leading gale, the winds blowing then from ENE. to NNE. and observe the tides, to weigh when they are favourable. I shall not repeat here the description of this coast, and the dangers that surround it: What I have said in the two last chapters will suffice to shew the navigator what is necessary.

As soon as you have passed Parcelar Point, you must steer WNW. 'till Parcelar Hill bears E $\frac{1}{2}$ N. then keep it in this direction, to pass between the North and South banks. This course will soon bring you in sight of the Easternmost of the Auore Islands. This is a little round island or great rock, which may be seen 6 or 7 leagues; and in clear weather you may see that and Mount Parcelar at the same time.

When you are within 2 or 3 leagues of the Auore Islands, you may sail NW. even to NWbN. for whilst you are within sight of the little rocks, which encompass these islands, you are to the Westward of the banks, which consequently are doubled, and will be in mid-channel, between the banks and the islands, when the latter bears SW. 3 leagues. In this track you have soundings from 30 to 50 fathoms, as you near the islands; but it decreases to 16 and 17, going towards the foot of the North bank.

Keeping NWbN. will bring you in sight of P°. Jara, between which and the islands (b) which lie to the Southward of P°. Sambelang, the currents generally run NW. and afford an advantage not to be met with on the Sumatra side.

From P°. Jara, if you continue your course NNW. and NWbN. you may first see P°. Pinang, then P°. Pera, which you may pass at what distance you please.

From P°. Pera, if you are bound to Pondicherry or Madras, you must make the Nicobar Islands, which you may pass between, or go to the Southward, as you like best. It is reckoned 95 leagues WbN $\frac{1}{2}$ N. from P°. Pera to these islands. Several ships pass through Sombrere Channel, which is more Northerly: Others bound to Pulicata or Madras, prefer, at this time, the Ten-Degree Channel. Of these you make choice with respect to your consigned port.

If you are bound to Masulipatam, or any other place more Northerly, it will be better, from P°. Pera, to shape your course to pass between the islands to the Northward of the Andamans; this proceeding is surer, on account of the winds, out in the bay, which blow from the Northward, and the currents running to the Southward.

Observe farther, especially in January, to make the land always to the Northward of the port you are bound to; and as you come near the land, keep a good look-out, in order to avoid being deceived by the currents.

Ships from the Gulf of Siam, China, or the Philippine Islands, which sail in February or March, through the Straits of Malacca, for the coast of Coromandel, must follow the preceding instruction, and sail by the Nicobar Islands, or through Sombrere Channel. As to those which go from Malacca to Bengal, in the NE. monsoon, I shall not here repeat what I have before shewn in page 47.

In the  
Westerly  
monsoons.

If you undertake this voyage, from Malacca, in the months of April, May and June, when the Westerly monsoons are settled in these seas, you must, from the Islands of Auore, steer towards the Two Brothers, keeping along the coast of Sumatra, and the islands to the Northward of Acheen, and from thence endeavour to fall in with the coast of Oriza, in 18° 30' N. as I have shewn in the 45th and following page, in the instructions concerning the voyages to Bengal, to which I refer you for the rest.

Those

(b) Our author, under mistake, means the true Sambelang or Nine Islands, which lie to the Southward of P°. Dinding. See page 71.



Those who sail from Malacca, at the end of October, or November, for the Malabar coast, must steer from P<sup>o</sup>. Pera to go to the Southward of the Nicobar Islands; then shape a course to make the Island Zeloan to the Northward of the Baffes, and sail along the South coast thereof, as I have shewn in the instructions for voyages from the coast of Coromandel to that of Malabar, in page 60.

From Malacca to the Malabar coast in the Easterly monsoons.

## DIRECTIONS for sailing from MALACCA, to PULLO TIMOAN, through GOVERNOR'S STRAITS (c).

WHEN you weigh from Malacca road, you pass without the Water Islands, the Southernmost of which bears SEbS. about 4 leagues from the road, and may be coasted at about half a league distance. Having passed it, steer SE. to give a good birth to Formosa River, before which there is a bank (d), whose outer verge lies  $1\frac{1}{2}$  league from the coast, in soundings from 18 to 22 fathoms, in some places sandy.

WSW. (e)  $6\frac{1}{2}$  leagues from the Southernmost of the Water Islands lies Mount Moor, remarkable for the land about it being all low and woody: From thence to Mount Formosa (f) the coast stretches SE. and SEbE. This last is more distinct than Mount Moor. The bank above mentioned bars up the River Formosa, and permits no nearer approach to the coast than 6 miles. If you turn it, keep your lead continually going, that you come not too near its verge.

Mount Moor.

From Mount Formosa to P<sup>o</sup>. Pisang, the direct course is SE $\frac{1}{2}$ S. 10 leagues. Having doubled the bar off Formosa River, you steer along SE. and presently raise this island, about 2 leagues from the continent, forming a channel, in which there is not less than 4 fathoms water. On the West side of P<sup>o</sup>. Pisang are three other little islands; the largest affords good water, and boats may land there commodiously at high water, in a bay on the NW. side. Ships generally pass without these islands, but not under 9 fathoms, by reason of a sand-bank that surrounds them, and extends itself a mile without all. In this channel, at a league, or a league and a half off P<sup>o</sup>. Pisang, you have 18, 20 and 24 fathoms, mud, and have nearly the same soundings all the way from Mount Formosa.

P<sup>o</sup>. Pisang.

To the Westward of P<sup>o</sup>. Pisang, about 3 leagues off, there is a bank (g), very dangerous for its irregular depths, which on the NW. part (particularly) changes suddenly from 25 to 4 fathoms, and you may conclude the like all over it (b).

This

(c) Commonly called the Straits of Singapore.

(d) This bank lies along shore SEbE. and NWbW. about two leagues off shore: From the SE. end Mount Formosa bears NEbN. and Mount Moor NWbN. and from the NW. end (just without the bank, in 5 fathoms, hard ground) these hills bear E $\frac{1}{2}$ S. and North, NbW.

(e) This is a great mistake, and should rather be ESE. or indeed ESE $\frac{1}{2}$ E.—See N. B. in page 75.

(f) Mount Formosa bears off the outermost Water Islands ESE $\frac{1}{2}$ S. 11 leagues, and of Mount Moor SE.  $4\frac{1}{2}$  leagues.

(g) This bank lies about WNW. and ESE. 7 or 8 leagues, from the Westernmost part of which Mount Formosa bears NEbN. and P<sup>o</sup>. Pisang EbS. just in sight; and from the Easternmost end P<sup>o</sup>. Pisang bears from ENE. to NEbE. This channel, in the narrowest part (which is off P<sup>o</sup>. Pisang) is about 2 leagues over; and the leading mark through, is to keep Mount Formosa NNW. Westerly, or the Great Carimon SSE. Easterly, 'till P<sup>o</sup>. Pisang bears NE. and then you may steer more Easterly. Some think this channel is but 4 miles wide; but see Nicholson's Remarks and Observations, p. 73, &c.

(b) This remark is taken from the journal of the Sieur Bern, who in 1724 was obliged to anchor in 4 fathoms, and was in danger of being lost. From 25 fathoms he fell suddenly into 4, after having stood only a mile to the SE. This navigator imagines that this bank is formed by rising grounds, separated one from the other, having passable channels between. Others, who have not experienced the same danger, imagine there is no such bank; but the accident which happened to the Sieur Bern refutes this opinion. It is great pity our author has not given the bearings of land at the time they were at anchor in 4 fathoms.

B b.



This bank extends more Northerly than is laid down in most charts of this strait: The passage next the coast of Sumatra (which may be seen to the SW.) is exceeding dangerous; I would not advise you to try it. If, sailing from Malacca to P°. Pisang, in the night-time, you should be hurried by the rapidity of the tides to the Westward of this bank, you must steer to the SE, along its verge on that side, without approaching the coast of Sumatra, 'till you bring P°. Pisang to bear ENE. then you may stand to the Eastward, towards the coast of Malacca, and regain the good channel.

The tides between Malacca and P°. Pisang flow N. and S. or at 12 o'clock, full and change; the flood to the SE. and the ebb, which is strongest to the NW. Though this is the general rule, yet it frequently varies; for to the Eastward, beyond P°. Pisang, these tides are exceeding irregular, running sometimes for 20 hours one way, and 18 the other, especially in the Sincapour and Governor's Straits, and at the East entrance of the straits of Malacca; so that there is no dependance to be made on them. The skilful navigator will make advantage of them, when they are favourable to his purpose, and anchor when they are contrary, unless by a fresh of wind he can stem them.

Carimon  
or Carim-  
an  
Island.

As soon as you are past P°. Pisang, the Island Cariman may be seen to the S. Eastward, distant about 8 leagues. Your course is SEbE. to near P°. Cocops, a small even island, covered with trees; and a little distance (*i*) from the coast of Malaya. A point of land on the continent adjoining, called Tanjong-Bouro (*k*), and the Little Cariman, bear NE. and SW.  $4\frac{1}{2}$  or 5 leagues (*l*) one from the other.

P°. Co-  
cops or  
Cocob.

It is (SE  $\frac{1}{2}$  S.) about 6 leagues from P°. Pisang (*m*) to P°. Cocops; between them lies a small bank, which you may avoid, by keeping a little off the coast of Malaya. In this channel you have soundings from 18 to 20 fathoms, mud, and about a league off the latter you have 16 fathoms. Beyond Tanjong-Bouro the coast of Malaya forms a bay, wherein some little rivers empty themselves, on the East side whereof is a little island, called the Island of Adders (*n*), between which and the Westernmost point of P°. Pisang (*o*), is the entrance of the Old Straits of Sincapour; and to the Southward of the said point you see also the entrance of the New Strait, so called. But most ships, at present, prefer Governor's Strait to either, as being both shorter and safer.

Old and  
new straits  
of Sincapour.

The Two  
Brothers.

Being past P°. Cocops, if you keep on SEbE. you will soon get sight of two little islands at some distance from each other, but nearly alike in size and height: They are called the Two Brothers (*p*), and lie on the East side of the straits of Durion; keeping these to the S. Eastward (*q*), endeavour to get sight of Tree Island, which is a bank of sand, almost even with the water, upon which there are 5 or 6 clusters of shrubs. At high water it is almost entirely covered, and you can distinguish only the bushes. It is steep to, and therefore dangerous to approach it in the night, especially as you can form no judgment of its distance by the soundings,

(*i*) It is so close to the Malay shore, that you cannot distinguish it to be an island 'till you have passed it; but it may be known by the trees being of a very bright and green. (*k*) Or Tanjong-Boulus

(*l*) This distance will be found, I believe, not above  $3\frac{1}{2}$ , or 4 leagues at most.

(*m*) The Malay shore between these two is pretty level; to which come no nearer than 15, or on an emergency 12 fathoms; nor under 15 fathoms towards the Sumatra shore, under which is foul ground, and shoal water; particularly when the Easternmost point of the Carimon bears SE  $\frac{1}{2}$  E. about 5 leagues, and P°. Pisang N  $\frac{1}{2}$  E. about  $4\frac{1}{2}$  leagues, it shoals suddenly from 15 fathoms soft to 9 fathoms hard ground.

(*n*) Or Snake Island.

(*o*) Or Long Island, called also Sincapour, or Sincapore.

(*p*) It is necessary to inform the reader, that our author does not mean here the islands also called by the same name in most English remarks, journals and charts, which lie to N. Westward of the Cariman; but either means Barn Island, and that to the Northward of it, which Capt. Rawlins also, in his Directions, calls the Two Brothers, or else the Two Islands to the Northward of Barn Island, as I find hereafter he has a particular name for Barn Island, which he calls Square or Passage Island; and unless these are distinguished they may breed great confusion.

(*q*) To the Southward of Tree Island, it is very dangerous, as there is a reef runs therefrom a great way; for which reason ships bound through Governor's Straits always go to the Northward thereof; and those who are bound through the straits of Durion or Dryon, give it a large berth.



foundings, for which reason, if they cannot be seen, come no nearer than 15 or 16 fathoms. Although, between P<sup>o</sup>. Pisang and Governor's Straits, the tides are very irregular, you may observe, however, that from this island to that of Cariman, the flood generally sets from SEbE. to EbS. and afterwards runs ENE. when Cariman bears SE.

Five miles EbN. from Tree Island is situate Square or Passage Island (r) to the Northward of which are two others, bearing off each other SbE. and NbW. and near its South point are two great rocks (s), which form the North side of the entrance of Governor's Strait; the Southernmost of which is called the Viol, on account of its similitude to that instrument, at a certain point of sight.

Square or  
Passage  
Island.

On the other side of the entrance of this strait, lies Red Island, bearing SWbS. about a league from this last: It is a small island, so called from the colour of the sand and earth: On the top of it are several green trees, and it is a sure mark for this passage: The Tree Island above mentioned is distant from it  $1\frac{1}{2}$  league to the N. Westward. In case of necessity you may anchor a-breast Red Island, in 18 fathoms water; but come no nearer it, on account of several rocks that surround it.

Red  
Island.

To enter this strait, when you have sight of Tree Island, steer for the South point of Passage Island, and being up with it, you may round the little island, called Viol, at what distance you please: then steer EbN. for the South point of St John's Island, which bears thus from you: Its distance is about  $4\frac{1}{2}$  leagues from Passage Island. You should not sail along the South side of this passage, as it is encompassed with several rocks, which being mostly covered at high water, make it very dangerous: The same reason will hinder you from entering the bay on the North side, wherein are found many little islands; but keep directly in mid-channel. You are not long getting through with the tide (t), which runs here very strong. As to the depths, they

St John's  
Island.

(r) Called mostly by the English, Barn Island. (s) These are called Rabbit and Coney by the English; the Northernmost Rabbit, and the Southernmost (which our author calls the Viol) Coney: They are steep to. N. B. I have one journal sets these islands bearing in one NNE. another W $\frac{1}{2}$ S. a vast difference! and one must err greatly: Mr Nicholson makes them in one NbE $\frac{1}{2}$ E. and SbW $\frac{1}{2}$ W. and says he was very particular in making his observation thereof, as he had heard of the difference mentioned in this Directory. I therefore beg leave to observe, once for all, that if navigators would have correct charts, they must be more curious than they generally are in their setting the land, &c. these being the foundation on which those are constructed.

I am very sorry there is so much reason for complaint; but I have frequently (and that not only in one journal or voyage, but in several) found the bearings, on examination, not only improbable, but impossible: This may be owing, in some measure, to the heedlessness of those who first take the log off the board, from which the rest are copied; sometimes mistaking the point for its opposite; but frequently mistaking the wrong side of the cardinal points, as SbE. for SbW. &c. &c. And for manifestation of this, only let any one project the bearings set at any one time, and if they are true they will agree (at least nearly) with the bearings of the same places, at the next setting thereof, allowing the course and distance run as near as may be: but to this it may be replied, that in these and such narrow straits, there is no such thing as forming a true judgment of the course and distance, on account of the rapidity and irregularity of the tides: It is readily granted; but therefore it is necessary to set the more places in sight that are known, or are any way remarkable, even though (nay, the more so for that) they have been set several times before, and judging the distance of each as near as possible; that by a great variety of these bearings and distances, the true bearings and distances of places one from another may be nearly ascertained; but what will more especially expedite this, is to be careful to take the bearings of any two or more places, when in the same direction: for hereby one of the two points is gained, and I need not inform the skilful navigator, that when the true bearings of any three places, one from another, are known, the distance between each may be easily determined by the ship's run; so that by this means not only the bearings and distances of these three places are determined, but all other places that can be set at the same time with them; and so on all along the coast, or throughout a strait, &c. By all which it appears, that this is of more consequence than many may at first imagine: as by this means, in time, this art may arrive at perfection, and both charts and directories may be perfect, and agree with each other; (for nautical directions as well as charts vary) and the method to attain this much-desired end it must be allowed is not difficult, yet requires special care; but the advantage reaped thereby will more than make amends to any lover of the art: For I dare take upon me to affirm, that this will be of as much benefit to navigation, as the discovery of the longitude; and therefore I hope this remark will not be disregarded. I have only one thing more to observe, which is, that the setting the extremity of islands, &c. when they begin to shut in, or open with other islands and places, will be a great means towards determining the length and breadth thereof—See the Preface, Page ix.

(t) But in case of wanting wind or tide to get through before night, there is good anchoring ground under Barn Island, in 7 to 10 or 12 fathoms, the island bearing from NE. to SE. 1 or 2 miles off shore: Also under St. John's Island, in 12 to 18 fathoms, the said island WSW. or SWbW. 1 or 2 miles; where (and indeed on most of these islands) you may have plenty of wood for cutting, and water: There is also a bank in the fair-way, between these islands, on which, if belated, you may anchor, in 15 or 18 fathoms.



they are very unequal, as 20, 30, 35 and 40 fathoms, between Red Island and the Viol; beyond these you have various depths, as 30, 50, 80, and 25 fathoms near St. John's Island.

The following are the most known dangers on the South side of this channel.

SEbS. of Passage Island, about  $1\frac{1}{2}$  league there is a reef of rocks, which are only to be seen at low water: They are about a quarter of the channel from the South side.

The Elephant.

Two leagues and a half EbS. of the same island, there is a single black rock (u) above water, about the size of a long-boat: It is about one-third of the channel from the South side: It is so very steep, that close to it you are in 17 fathoms, and a little more Westerly in 30.

SE $\frac{1}{2}$ S. of St. John's Island lies a reef of rocks, even with the water, and 2 leagues farther WbS. of these, there are others, bearing SW $\frac{1}{2}$ S. of the same island (x).

To the Westward of St. John's is another island, which being only separated from it by a little channel, appears to be the same. You may sail along St. John's Island at half or three quarters of a league offing: From thence steer EbN. which will bring you, in mid-channel, between the White Rock and Point Romania, which two form the mouth of the straits of Malacca, to the Eastward.

At the East end of P<sup>o</sup>. Panjang (y) is a shoal, projecting to the S. Eastward,  $2\frac{1}{2}$  leagues therefrom, even as far as the mouth of the river Joor (z): It is steep to, having from 10 to 15 fathoms just without it, when Point Romania bears E $\frac{1}{2}$ N. 6 leagues; St. John's Island about the same distance WSW. and the Easternmost point of P<sup>o</sup>. Panjang NWbN.  $2\frac{1}{2}$  leagues, and Johor Hill NE. By keeping about 3 leagues off shore, in 20 fathoms, Point Romania bearing EbN. or a little more Northerly, and St. John's Island WbS. or a little more Westerly, you will go far enough without it.

Barbucet Hill.

The extremity of Point Romania is low, but on this side of it rises a little hill, called Barbucet Hill, which, in coming from the Northward, serves for a mark to enter the straits. To the Eastward of Point Romania are several large rocks above water, encompassed with many others underneath, which together form a very dangerous reef for  $1\frac{1}{2}$  or 2 leagues without all. There is also a passage between the continent and this bank; but I would advise you not to attempt it, even in a small ship; though those who have passed through it say there is not less than  $3\frac{1}{2}$  fathoms water in it: The surest way then will be to pass to the Southward, between this reef and the White Rock bearing SSE. 8 miles off Point Romania. This rock is very steep, and covered with birds dung, which makes it look white, and which you may pass to the Northward, within half a league, without any hazard. The depth increases in the fair-way from 28, 30, to 35 fathoms.

The passage to the Southward, between the White Rock and the Island Bintam (a), is full of rocks; therefore make choice of that to the Northward, which has none.

From St John's Island to the White Rock, you must still avoid the South shore, its bottom being very foul. Having passed the White Rock, when it bears SW. you steer NNE. to give a good birth to the bank off Point Romania, coming no nearer it than 16 or 17 fathoms; besides which there is no danger here, by night or day.

*The flood tide runs strong into these straits, NW. and the ebb longer and stronger, ENE. in the SW. monsoons; and the contrary in the other monsoons: But the time of flowing on full and change days is uncertain in both; only in the former it flows nearest North and South, or at 12 o'clock; but in the latter it has a greater dependance on the winds, the flood running in when it blows fresh frequently for 12 hours together.*

(u) This is by some called the Elephant, and by others the Buffalo, and is said also to bear SW $\frac{1}{2}$ S. 2 leagues from St John's Island.

(x) It also bears EbN. 2 leagues from the Elephant, or Buffalo; but there is also a shoal without it, which bears SEbE. from St John's Island; between which islands and the rocks are soundings from 15 to 20, 30, 40 and 50 fathoms, and then shoals suddenly to the Southward.

(y) Or Sincapour.

(z) Or Johor.

(a) Or Bintang.



The variation is about  $2^{\circ}$  N.Westerly, throughout these straits; nor has it varied much for many years.

When you have doubled this bank, steer NbE. towards P°. Auore, (b) which bears NNE  $\frac{1}{2}$  N. P°. Tingy. 30 leagues from Point Romania. You pass to the S. Eastward of P°. Tingy a high land, which at this bearing makes in a peak, rising gradually from the East coast. To the Southward of this island there are some small islands; and SEbS. 3 leagues, there is a rock at the water's edge, which you must avoid in sailing towards P°. Auore.

This last lies about  $6\frac{1}{2}$  leagues to the E. N. Eastward of P°. Tingy: It is very high land, making in a saddle, when it bears NE. its two extremities (c) appearing higher than the middle; but when it bears NW. it hath a different appearance (d). Near the SE. point is a little island, covered with coco-trees, and 3 or 4 others on the North side. This island affords water, and some refreshments. You may anchor either off a small sandy bay to the Eastward, or another to the Westward; the former in the Western monsoon, and the other in the Eastern.

Most ships bound to the Gulf of Siam, after doubling the reef of point Romania, keep along the Malay coast, in 14 and 15 fathoms; passing to the Westward of P°. Tingy, and the islands to the Northward, through a channel, in which there is not less than 8 or 9 fathoms.

I shall here insert an extract from a journal of a very expert navigator, who sailed to the Eastward of P°. Tingy, and passed thence to the Northward, between that and the island lying to the NW. thereof, which will afford some knowledge of these parts, as far as P°. Varella, which lies 9 leagues NWbN. from the North point of P°. Timoan (e).

" June the 17th, 1682. Sailing from Pedro Branca, or the White Rock, we stood to the Eastward,  $2\frac{1}{2}$  or 3 leagues, rather for form's sake than through necessity, to double a bank, which the Portuguese charts make to run out a good distance from Point Joor; (f) I saw no likelihood of its projecting so far out as these charts represent: Hereupon I steered North, and NbW. with a steady gale at WSW. to get sight of P°. Tingy; and though I imagine the tides were against us, that did not hinder us from perceiving, about midnight, P°. Tingy, from NNW. and NWbN. of us, and P°. Auore North, so that on the 18th day at noon we were a league to the Northward of P°. Tingy, where I observed, in a little bay, on the North side thereof, some banana-trees, palm-trees and huts. The depth off this bay, at the above distance, is 14 fathoms, sand and oaze. We steer WNW. and NWbN. to go between P°. Tingy and a large island to the N. Westward, which, when it bore NNE. we stood to the Northward; leaving the islands near the shore on the larboard, and leaving on the starboard this large island, which is long and high, lying North and South, and the Western shore embellished with a border of fine white sand. Throughout this whole track we found 14, 12, 8 and 7 fathoms, sand. About a gunshot from this great island, there is a lesser one, but high like the first. Having been set off to seaward from the continent, and being about  $1\frac{1}{2}$  league to the Eastward of the North part of this island, and in order to get in with the land again, we steered NNW. and NWbN. so that on the 19th at noon, P°. Varella, a little island, which lies off the continent of Malaya, bore East 3 leagues of us. In this track we had 10, 8 and 6 fathoms, sand, gravel, and sometimes oaze. At the same time P°. Timoan bore from SE. to SEbE. about 11 or 12 leagues. The land of Malaya, thus far, is low by the sea-side, with a sand shore and some downs. The winds blow, in the day-time, from the SE. and in the nights shift round to the Westward, 'till about 10 or 11 o'clock in the forenoon.

By the extract from this navigator's Journal you see you may safely pass between these islands (g) and the main. I shall now return to the description of the islands without.

To

(b) Or Auore. (c) The Easternmost is the highest. (d) The two hills being then shut in one. (e) Or Timoon. (f) Pr. Romania.

(g) Nevertheless, I would recommend it to those who may sail this way, to keep a good look out for some rocks, laid down in some draughts, between this island and the main, as near the water's edge.



To the N. Westward of P°. Auore is situate P°. Pisang, which like P°. Auore appears about 2 leagues long, at this bearing. The channel, between the islands North of P°. Auore and the South point of the other, is about 2 leagues wide, and free from danger.

The body of P°. Timoan bears NNW. of P°. Pisang, and from the North point of this it is computed 3 leagues to the South point of the other, near which is a little island or rock, which must be coasted to the Southward, when you sail through the channel for the West part of P°. Timoan.

P°. Timoan The latitude of the middle of P°. Timoan is 3°. North (*b*): It is the largest of all these islands, and so high, that the top of it is sometimes hid by the fogs; and there is one mountain terminating in two points, like the ears of a hare, which navigators have therefore called by that name. There is good anchorage and good water on both the East and West coasts; the dangers are all apparent, and the bottom clear: It is said that this island is the most plentiful in refreshments, and very proper to put in at. The most considerable village is at the SE. part, at the bottom of a little sandy bay, where you may anchor in 20 or 22 fathoms, sand (*i*).

At which-ever of these islands you land, you must be on your guard against the inhospitable disposition of the Malayes or inhabitants, and not trust to their fair appearance: This they do but put on, the easier to surprise strangers unawares: The safest way will be, not to go on shore without being well armed, and to be careful not to go far from the sea-side, but make them bring the commodities you would purchase thither.

At the NW. end of P°. Timoan are 3 little islands, between which and the great one the channel is very deep, and consequently sure: Near the latter, under shelter of these little islands, there is very good anchorage in 12 fathoms.

Anambas  
Islands.

To the Eastward of these islands, about 23 leagues from P°. Auore, you meet with another cluster of islands of different sizes, called the Anambas, which are very high: But neither their number any more than their respective bearings appear to have been known. The ancient charts represent them as a confused heap, without distinguishing or giving name to any one of them: However, the journals of some navigators, who have fell in with them, make between them several passages; but as what they have said concerning them is not circumstantial enough to correct the old charts by, and make one more accurate, I have been obliged (rather than make an omission in this part of my charts) to insert them as I found them: I therefore give navigators this caution, that they may not put too great dependance upon them. I shall, in my Direction for the Voyages to China, page 118, describe how their approach may be known.

Island  
Domar.

Fourteen leagues EbN. (*k*) there is a little island (*l*) or rock, to the Westward of the Anambas, which I made going to China, in 1737, in the ship Prince de Conti. Several navigators, who have frequented these parts, assure me they never saw it: It is true, that in sailing 5 leagues from

(*b*) Most of the Journals I have seen make it no more than 2° 50'; and some, who have had observations nearer the island, not above 2° 45'.

(*i*) For further particulars see Nicholson's Rem. p. 89.

(*k*) I suppose our author means from P°. Auore.

(*l*) This little island is named Domar in a Portuguese chart, drawn in 1687, except which I never saw it with any name. As to its existence, I make no dispute, having been assured thereof by several gentlemen in our own service, who have seen it. And it is wonderful to me it is not oftener seen, if the account I have of it is true, which says, "It lies pretty near in the fair-way between P°. Auore (or rather P°. Pisang) and the Anambas. I have made it twice: It is as high above water as a ship's main top, and twice the length of a large ship, so that there is no fear of it in the day-time; but you ought to be cautious of it in the night. It lies about 6 leagues from the Anambas, and bears about East from P°. Pisang. I have seen P°. Pisang, P°. Auore, and this Rock, at the same time." I with the author of this remark had given us the bearings and distance of each at that time. Capt. Vincent fell in with it by design, in July, 1758, and makes it to lie N 87° W. 6 leagues from the Westernmost part of the Anambas, in sight at sun set, when he also saw another island, bearing W  $\frac{1}{2}$  S. which he thinks could be no other than P°. Auore. Having had a good observation at noon, he makes the latitude of P°. Domar 2° 43' N. and about 8 or 10' W. from P°. Taya, by his run from thence; though he supposes he may have been set somewhat to the Eastward by the current, as is usual at that season.



from P°. Auore, it cannot be seen; but its existence is not, however, the less certain. You find it described in the English Pilot, chap. 5. page 64 (m), at the bottom of the first column, under the title of "Instructions for avoiding the Banks of Lucepara." It should not have been mentioned in this place: This transposition is the reason that the greatest part of navigators have taken no notice thereof. That collection is full of errors of this kind, which I do not attribute to the author; but what surprises me is, that they have not been yet corrected in the various editions; and those who suffer themselves to be misled by the said book, expose themselves to much greater dangers than they are aware of.

To the N. Eastward of the Anambas, there is another cluster of islands, like the last, called the Natunas, which are as little known as the others (n).

If coming from the Gulf of Siam, Manilla or China, in the Eastern monsoons, and are bound through the straits of Malacca; after you have passed P°. Auore steer SbW. (o) in 30, 25, 20, and 18 fathoms, black stiff mud, intermixed with some fine sand. On approaching the reef off Point Romania, when in 16 fathoms you can see that point, and the low land near it, come no nearer the reef than 15 fathoms, 'till Barbucet Hill bears WbN. or West, and Bintan Hill SbW½W. and the White Rock SWbS: 2 or 3 leagues; then you may round it, steering SSW. and SWbS. to SW. as far as West, leaving the White Rock on the larboard hand, off which, as I have said elsewhere, p. 76. the depth increases to 20 and 30 fathoms.

Entering the East end of the straits of Malacca in the Eastern monsoons.

At the entrance of the strait, the tides run in and out with great rapidity, but in the NE. monsoon, stronger and longer, even at the rate of 3 or 4 leagues in an hour, running thus 12 or 14 hours without ceasing; in the spring their course is so irregular that I can give no certain rules concerning them.

If coming from the Northward with a strong gale of wind, and you think you cannot enter the strait before night, it is better to anchor at P°. Auore, and weigh from thence so as to be able to reach the strait and get in by day-light. You must, at this season, anchor off a little sandy bay, on the West side of the island, in 25 fathoms, the extremities of the island from NNW. to ESE. When you sail from this place, you steer, at first, due South, to avoid the rock, which, as I have already said, lies 3 leagues SEbS. off P°. Tingy, then SbW. and for the rest conform to the directions already given.

From the White Rock or its offing, you steer West to Joor River, then WbS. to the South point of St John's Island, on which are several tall trees, and a small island on the South side (p). In this track you must take heed of a bank, which projects from P°. Panjang, of which I have given the marks in page 76. However, there is no danger by keeping in 18 or 20 fathoms; but let not the fear of approaching it induce you to take the larboard or South side, where the dangers are more than to the Northward.

Having passed St John's Island, if you have not wind enough, or the tide proves contrary to get through Governor's Straits, you may anchor about a league SW½W. of St John's Island, in 18 or 19 fathoms: A little more Southerly there are also other proper depths, but the bottom is foul, therefore I do not advise anchoring there.—See note (t), in page 75.

From this place, steer WbS. towards the island called the Viol, at the South point of Passage (q) Island, and having passed it steer NW. or a little more Northerly, if the tide sets upon Tree Island; when you are past that steer WNW. for the channel, formed on the SW. by the Little

(m) In the edition of 1755, it is in the second column of page 45; and the title at the head of the preceding paragraph, To go clear of these sands (off Lucepara) outward bound.

(n) In my edition of these charts I have inserted such of these Islands as well as of the Anambas and Holy Spirits, as I could vouch from authentick memoirs; particularly those seen in the Osterly, Albion, and Ganges, country ship.

(o) But take care of the Sunken Rock, in the fair-way.—See page 77, and the next paragraph but two.

(p) Some charts place this little island off the East coast of St John's.

(q) Or Barn Island.



Little Carimon, and on the NE. by P°. Cocops and Tanjong-Bouro. This passage is very safe, though the depths are irregular, from 16 to 24 fathoms.

It is, generally, better to keep on the NE. side than mid-channel, because the tides that come out of the Old Strait of Sincapour set to the Southward: Observe, therefore, which way they run, in order to guard against them accordingly.

It is about 6 leagues from P°. Cocops to P°. Pisang, which last should be coasted at about a mile distance along the foot of the bank which surrounds it. From thence the course is NW. attending to the instructions prescribed at the beginning of this chapter, page 73, as well for what regards the bank lying WSW. of this island, as to give a good birth to that off Formosa River, which being passed, you sail close round the Southernmost of the Water Islands, from whence you steer NWbN. for the road of Malacca.

I here conclude the directions for this strait, without giving any for those of Durion (r) and Sabon; as those I have hitherto met with did not appear to me particular enough to deserve the confidence of navigators (s).



### INSTRUCTIONS for sailing from PULLO TIMOAN to SIAM in the WESTERN MONSOONS.

THE situation of the places, and the winds, which blow from SW. to W. throughout the Gulf of Siam, at this season, prove the necessity of keeping along the Western coast, in order to save your passage, or at least to render it less tedious and hazardous: Therefore if you sail without P°. Timoan, from its North point steer NNW. to make the coast of Malaya, and then sail along shore, in what depth you please; for it is every where safe, the land high, and bordered with a sandy beach.

Island  
Varella.

P°. Varella bears NW. 9 leagues of the North point of P°. Timoan: It is properly only a large rock: But in passing it to the Eastward take care of a rock under water, about 5 miles NEbN. off this island.

P°. Capas.

If you continue the before-mentioned course, you will see P°. Capas, situate in  $4^{\circ} 57' N.$  latitude, 7 leagues from the Malay coast, and  $39^{\circ} NNW\frac{1}{2}N.$  of P°. Timoan. This island is high, and may be seen 10 or 12 leagues. You may pass on either side of it, in 20 or 25 fathoms. If you go without all, you must take care of a reef, which projects about half a league from its North point, which is the only danger about it.

Islands  
Ridang.

The Ridang Islands lie NWbN. of P°. Capas, the S. Easternmost being about 10 leagues therefrom. They are high, many of them extending about 16 leagues NW. and SE. along the coast; and though they form a channel on that side, the best way is to pass without all, at half a league distance, in 25 or 30 fathoms.

Between  
Ridang  
Islands  
and the  
continent.

To sail between these islands and the continent, as soon as you have doubled P°. Capas you will see, along the coast, a long barren island in  $5^{\circ} 15' N.$  North: You sail along the East coast thereof, and from thence through an exceeding small, experienced channel, between the two S. West-

(r) Or Dryon. For Capt. Hallet's instructions for going through these straits, see Appendix, page 136. There is also published a draught of the ship Bute's track through these straits, which may be had to bind up with the charts of this New Directory.

(s) Any gentlemen, who have any remarks or journals of these or other parts, and are desirous of encouraging this work, in order to render it complete for the use of navigators; if they will be so kind to communicate them to the publisher hereof, they shall be carefully inserted in the next edition, and the favour gratefully acknowledged by him, who is a real well-wisher to the advancement of this useful science, the glory of our nation.



S. Westernmost islands of this archipelago; that to the NE. is high and round, with several sandy bays. In this narrow passage you have 9, 10, 11 and 14 fathoms water. The following extract from a journal will better inform you of the necessary precautions for passing between these islands.

"The 21st of June we lay off a long and barren island, in the latitude of  $5^{\circ} 15' N$ . The charts lay down a bank along this coast; I saw nothing of it, nor any sign thereof; we had soundings from 22 to 18 fathoms. About 8 P.M. we passed between the two S. Westernmost Islands of P°. Ridang, in 9, 10, 11 and 14 fathoms, steering NWbN. they are about two cables length apart. From thence I stood NNW. and sometimes North, leaving on my right hand the other islands, where the depth is found from 14 to 25 fathoms, from that on the starboard, to another long one which lies on the larboard, having 22 fathoms close to it. NW. of this island there are two larger ones, and NW. of them three or four little islands, among which is one much higher than the rest, making like a sugar-loaf. That nearest the continent is rocky, and bluff to the Northward; and the N. Westernmost has a rocky point, projecting a quarter of a league.

"In this cluster, or archipelago, are reckoned 13 or 14 islands, among the rest P°. Ridang, which is large and high. The Northernmost of the other two, between which we passed, is high, round, and has some strands of sand. There are 9 or 10 other islands to the N. Westward, 5 or 6 leagues from P°. Ridang, three of which are large, and four others small. Coming from the Southward you leave them on the larboard, to prevent entangling yourself between them and the continent, as there are some dangers which may be seen off these islands. Half a league beyond these, I discovered the low land of Malaya.

"The 23d at noon, I observed in  $6^{\circ} 10' N$  latitude. This coast trenches SE. and NW. a little to the Southward, and Northward it is low, and forms little bays; the depth from these islands to within about 2 leagues of the land, is from 18 to 15 and 10 fathoms. At night you have land breezes, and in the day-time the squalls are pretty strong.

"The 24th at noon, the latitude observed was  $6^{\circ} 36' N$ . From hence we first saw the land about Cape Patani. All this coast is low near the sea-side; but in-land are high mountains, winding with the shore, which is very full of bays. You have here 20 and 24 fathoms, mud."

If you sail without the Ridang Islands, after passing the latitude of the Northernmost, haul in for the continent, which from  $6^{\circ} 30'$  to Cape Patani in  $7^{\circ} 4' N$ . stretches to the N. Westward. This coast, as appears from the extract above mentioned, forms several bays, is low towards the shore, and hilly in the country. Cape Patani.

About 14 leagues off Cape Patani lies P°. Lozin. The winds in the Western monsoon require you to keep in sight of the Malay coast, rather than this last. Beyond Cape Patani the coast forms a great bay, very shallow, off which it generally blows very fresh. Po. Lozin, or Cofyn.

When you are about 4 or 5 leagues to the Westward of Cape Patani, shape your course for the Island Tantalum, which you may coast in 12 or 14 fathoms: The North point of this Island forms the East side of Ligor bay. Island Tantalum

P°. Cara, or the Islands of Cara (being 3 in number) lie North and South, in  $8^{\circ} 30' N$ , about  $7\frac{1}{2}$  leagues to the Eastward of the North Point of the Island Tantalum. The Northernmost, and largest, has on the SW. side a sandy bay, in which some navigators affirm is to be found fresh water descending from the top of the island to this bay. The Southernmost is only a large rock, which appears white, coming from the Southward. On the same side, about two cables length from its extremity, there is a flat rock, near the surface of the water. Po. Cara.

The passage between these islands and the continent is very good, having from 14 to 18 fathoms, 2 or 3 miles off shore. After you have passed them, you steer NNW. towards P°. Carnom, distance therefrom 32 leagues on this point of the compass, in soundings of 20 and 8 fathoms. Before you get the length of P°. Carnom you will see, to the Westward, near the coast, Po. Carnom.



Larchin  
Islands.  
Point  
Lornont.

coast, a considerable cluster of islands and rocks, called the Larchin islands: To the Eastward of which there is a high land, called by some Point Lornont.

Pullo Carnom, at first sight, seems to form two Islands, by means of two mountains, separated by a valley, which is not perceptible above 4 or 5 leagues distance. This island may be coasted as near as you please, having no less than 10 or 12 fathoms a league off shore.

Po. San-  
cory, and  
Barda or  
Bardia.  
Cin Point  
Moun-  
tain of  
Penfels.

To the NWbN. are two islands (*t*), of about the same height as P°. Carnom: The first is called Sancory; the other near the continent is called Barda (*u*). You need not go near them, but from P°. Carnom steer North, towards Cin Point, bearing about N $\frac{1}{2}$ E. 40 leagues. It may be seen a great distance, by means of the Mountains of Penfels, which are quite close to it. Just at the pitch of this point there are two little islands; the coast beyond lies mostly NNE. and SSW. off which there are good soundings. You may sail along it without fear, 'till you come near the Road of Pepery, to the Southward of which there is a bank, which projects about 4 leagues into the sea, so that it is necessary to keep the lead going, especially as you near it. If you do not stop here, after you are past the bank, you steer NEbE. and ENE. 7 leagues, to anchor before Siam Bar, making proper allowance for the tides.

Juthia  
or Siam.

The islands, which form the different mouths of the River Menam (*x*), are so low that they can scarcely be seen three leagues off. The chief passage is known only by the coast's beginning here to rise a little higher and more woody. The anchorage is to the Southward, in what depth you please.

The city of Juthia, the capital of the kingdom of Siam, is situate upon an island, formed by this river, 16 leagues to the Northward of its mouth. The design I set out upon will not permit me to give it a particular description. Those who are desirous thereof may consult the Memoirs of M. Forbin, who made a long stay here. I do not suspect him of imposing wilfully on the publick, by exaggerating on the riches of this kingdom, and the beauty of its buildings, as several authors of the past age have done.

The observations made at Lonveau and Juthia, to determine its longitude, have enabled me to fix the situation of that and the other places thereabouts, as I observed in my Preface (*y*).

Cape  
Liant.

Twenty-two leagues SbE. from Siam Bar may be seen Cape Liant: It bounds on the East side that part of the gulf which the sailors call the Bay of Siam. To the Northward of this cape are several islands of different sizes, and many other lesser ones to the Southward and Westward. It is affirmed they are safe, and may be coasted without danger.

(*t*) The routier to the Neptune Oriental places these, promiscuously, at the distance of 15 or 16 leagues from P°. Carnom, as though they were close together; whereas the former is but 7 leagues from P°. Carnom, and the latter  $7\frac{1}{2}$  from P°. Sancory.

(*u*) Or Bardia.

(*x*) The English Pilot's chart makes the entrance of this river in  $13^{\circ} 52'$  which is  $22'$  more Northerly than it should be. This error is demonstrated by the astronomical observation made at Juthia, which fixes this town in  $14^{\circ} 18'$  North latitude. Moreover, the most exact travellers reckon it 16 leagues from thence, North and South, to this mouth; so that it should be in  $13^{\circ} 30'$  and not in  $13^{\circ} 52'$  as this author has placed it; otherwise it would be but 26 miles from Juthia to this mouth, which is absolutely wrong. The table of latitude, inserted at the end of that collection, where the latitude of Siam, that is to say, Juthia, is placed in  $12^{\circ} 47'$  is still more erroneous, but this I take to be an error in the printing.

(*y*) Page xiv.



To return from SIAM to PULLO-TIMOAN, in the EASTERN MONSOONS.

TO sail from Siam to India, or any other part to the Westward, you must wait for the Easterly monsoon, as the only season in which you can undertake this voyage.

*The winds begin to vary about the month of September, and in October the monsoon generally breaks up with violent storms from the SW. quarter, which renders the navigation of these narrow seas rather dangerous; but in November the weather is fair and settled, when this navigation is become safe and commodious for such voyages as are usually undertaken at this season. N. B. The currents set with the NE. monsoon, on the W. side, and against it on the E. side of this gulph; and the reverse during the SW. monsoon.*

When you sail from the road of the Bar, shape your course to round Cape Liant and the islands that surround it, then steer SEbE. to make P°. Way, in 9° 55' N. You may near them, as they are high and safe without-side.

Between Cape Liant and these islands the soundings are mud, from 45 to 35 fathoms, just in sight of them. If in their latitude you do not see them, and have soundings from 50 to 45 fathoms, it is a sign that the currents have set you to the Westward, as it generally happens in this monsoon; then you must luff up, and endeavour at least to see P°. Panjang: Nay, it is necessary to see this last, although you have seen P°. Way, and then bear away. You have 35 fathoms, mud, 5 leagues to the Westward. This island is high, even at top, and encompassed with several little islands. It is proper to bring it to bear North, before you begin to bear away, when it is necessary to steer SbE. to get sight of P°. Timoan.

It sometimes happens that in crossing the gulph, one falls in with the Malay coast sooner than expected; therefore look out in time. Some navigators give, as a sign of approaching it, soundings of coarse sand, whereas afar off they are mud: But this token doth not appear to me to be certain enough, and I think it better not to trust thereto. As for the rest, the latitude of P°. Capas once passed, all the Malay coast is safe, and the decrease of the depth is a sufficient caution to prevent your running ashore there in the night-time.

If, on the contrary, you are in less than 5° of latitude, and have 45 fathoms, it will then be necessary to stand in with the land, to get into less water; and thus you will not fail to make P°. Timoan, and thence P°. Auore, from whence you sail towards the Straits of Malacca; and if you design to pass that way, then conform to the preceding instructions (z): But ships bound to Batavia or to Europe, will find hereafter (a) the necessary directions for their navigation.

From PULLO TIMOAN to PULLO CONDORE, in the WESTERN MONSOONS.

PULLO Condore bears N26° 30' E. distance 125 leagues from P°. Timoan: Nevertheless, those who sail from one to the other must not content themselves with shaping their course according to their situation, but must be careful to guard against the currents, which in this monsoon set to the Eastward, and generally cause some difference that way. Their velocity doth not depend upon the force of the wind, as several pretend; for I have observed, by several journals of this passage, that with a moderate breeze the difference has been as considerable as with a strong gale; and experience invalidates the opinion of these currents and the wind having the same direction, since from a S. and SSW. wind you find, contrary to this rule, as great difference to the Eastward, as with the wind at WSW. therefore this opinion must be false. In the first case, where the direction of the wind is, for instance, the same with that of the two places, the only difference is, that you make a quicker passage than was expected; yet this



this doth not oblige you to take a sweep more one way than another : So that in this part it is difficult to settle a certain rule, concerning the direction and strength of the currents ; you may however, be sure of making P°. Condore, if sailing from P°. Timor you steer NbE. 65 leagues, then NNE. This is the way to prevent the usual set of the currents, and to get sight of this island, which may be seen 15 or 16 leagues in clear weather. At 5 or 6 leagues to the Southward, there are 21 or 22 fathoms, fine grey sand with small shells.

If you have this depth, and in the latitude of 8° 20' N. without seeing it, and that by standing North, or NNE. it decreases to 17 or 18 fathoms, this will shew that you are to the Westward of P°. Condore ; on the other hand, if it increases to 24, 25, and 26, you will find yourself to the Eastward thereof (b).

The Two  
Brothers.

West by South, 25 miles from P°. Condore, are two little islands or rocks above water, called the Two Brothers, about 1½ league from each other. The passage between them and P°. Condore is clear and safe.

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### A DESCRIPTION of PULLO-CONDORE.

**PULLO** Condore (c) is not one island only, but several, near one another. The etymology of the name is derived from two Malay words ; the first of which, Pullo, signifies an island in general, and the other, Condore, implies Calabash ; this name was given them from the great number of trees here, which bear this fruit. They are all very high and covered with trees. Their situation, according to the observation of P. Gaubil, is in 8° 40' N. latitude, and 105° E. of the Royal Observatory at Paris (d) ; and bears SbE. 17 leagues off the mouth of Cambodia river.

These islands may be divided into large, middling and small : The large one, which is the only one inhabited, is about 3 leagues in length, and half a league its greatest breadth : It lies NE. and SW. It is but, properly speaking, a chain of high mountains, very difficult to pass, extending from one end to the other, and separating the harbour from the great bay, where the natives dwell.

The middling one is as mountainous as the largest, but not so high ; its length is one league, and its breadth half a league. It lies SE. and NW. Its advantageous situation to the Westward of the great one, forms, between the two, an exceeding good harbour, capable of containing 8 ships ; its entrance is half a league wide, and the bay equal to the length of the middling island ; but ships cannot get to the farther end for want of water. Here the great and middling island are so near that there is but a narrow passage left for boats, canoes and proes. The tides, at the full and change, flow here NE. and SW. or at 3 o'clock, and the sea rises and falls 3 feet. The height of the hills darken this harbour, and render the air thick and very unwholesome.

On the other side of the hills, at the SE. part of the great island, there is a very spacious bay, at the entrance of which some little islands are so disposed that they close it up, as it were, half-way, so that the anchorage would be very good and safe, if the bay was not so wide, and so much exposed to the winds, which blow in the Easterly monsoons. Its chief entrance is to the SE. the other two are neither so good nor so convenient. Within this bay, upon a marshy and sandy plain, about three quarters of a league long, and one quarter wide, are dispersed here and there, irregularly, the huts or dwellings of the inhabitants, to near the number of 40 ; they are built with bamboos, and covered with cajans or grass of the marshes. Here may be seen the remains of the English fort, which was kept only 5 or 6 years, because they found it of no advantage to them (e).

Among

(b) For further particulars of soundings off this island, see Nicholson's Remarks, p. 80—1. Memoirs of M. Dedeir, engineer, sent by the French India company to survey this island. of the longitude of this island, see note (a), in p. 124.

(c) See note (k), p. 86.

(d) Extract from the  
(d) Concerning the determination



Among the little islands, one on the side of the great bay is pretty largish. They are not so high as the others; and indeed are only steep rocks, covered with moss and shrubs.

The land at the foot of the mountains on the great island, towards the harbour, is but of small extent, uneven, hilly, all covered with trees of an uncommon hardness, close and joined together by long and deep roots, and intermixt with rocks. The soil seems, at first sight, to be blackish and fat, but upon examination is found to be only sand, fattened at top with the decay of dead trees and leaves that have fallen. At the great bay it is nothing but fine white sand, dry, and of no substance. This island produces none of the fruits so common in all the other parts of India; here is neither rice nor pulse, only some potatoes, small gourds, water-melons very bad, and certain little black beans, all in small quantities; for besides the badness of the soil, the excessive rains prevent their production: Of this, the manner in which the natives manage their little gardens is a proof; they place a bed 4 inches thick, of prepared earth, upon a hurdle, about 4 or 5 feet square, supported by 4 props, about a foot and a half from the ground: Upon this they sow chibbols, (*f*) and mint; and every time it rains they take care to make holes in this bed to let the water soak through gradually: But notwithstanding all their care, they never come to great perfection.

However, this island has some advantages: It produces many forest trees, some of which are fit to make masts and yards for ships: There is also a tree that grows very tall and strait, from which the islanders extract a certain reddish rosin, sweet scented, and very combustible: (*g*) To get which they make one or more holes at the foot of the tree, somewhat like those made in France in the walls for holy water; and when they want any, they make a fire near the tree, for half a quarter of an hour, by which means the sap of the tree being put in motion, distils drop by drop into the hole, or trough, which they take care to empty when filled.

The islanders make use of other trees for their proes: They hollow them out, and raise their edges with planks, joined with rattan (*h*). The scarcity of pasture is the reason there is no cattle on the great island. There are some fowls, but they are so few their price is exorbitant. The middling island hath oxen and hogs, sprung from those left there by the English; but from their original tameness they are become wild, wandering promiscuously over hill and dale, yet scarce find pasture.

The Eastern and Western monsoons divide the seasons into dry and wet; the Western monsoon bringing rain, the Eastern fair weather; but this division of rainy and dry weather is not so equal as that of the monsoons; for rains continue here above a month after the setting in of the Easterly winds, which is generally about the middle of October; so that the rainy season, which begins in April, lasts 8 months, during which scarce a day passes without abundance of rain, which descending from the mountains in great torrents, destroy and carry away all before them. Besides, the ground being soaked with the rain, casts forth a stinking and offensive vapour, which renders the air very pernicious, rotting every thing within, so that you can preserve nothing, nor even do any thing without doors.

The dry season brings another inconveniency; the water dries up almost every where; the ground, which is only sand, becomes dry and barren; and the heat of the sun is so excessive, that you cannot be exposed to it without danger.

This island has no springs, affording only the rain water, which running down the mountains among the rotten leaves, wherewith the ground is covered, acquires a certain tincture, with an unwholesome quality; therefore the inhabitants prefer the whitish water (*i*) of their wells, to the clear water from the mountains. Besides, these are drained in the dry season, when they can get none but from wells, which must be dug where the ground will permit; but these places are not frequent, especially on the harbour side, though it affords some shelter from the heat at this season.

Hunting

(*f*) A small sort of onions.

(*g*) Called Dammer.

(*h*) Small cane.

(*i*) Foul, and perhaps brackish.



Hunting can be but little used in a country so improper, and whose only game consists in some wild pigeons and a sort of woodcocks. The sea produces here but few shells, and fish is seldom eaten, though very good and plenty; because the islanders but seldom fish in rainy weather, and in the dry season not at all, for fear of the boisterous winds.

P°. Condor abounds in reptiles and insects, both troublesome and hurtful. There are also numbers of apes, and monstrous lizards 5 or 6 feet long (which destroy all the poultry) and small ones winged, which fly from tree to tree; others which hiss, whose sting is mortal; snakes of a prodigious size and length; other small ones exceeding venomous; centupieds, scorpions, rats, and in short an infinite variety of insects, bred by the excessive heat; but the ants are the most troublesome of all, which get into every thing, and spoil whatever they come at.

The inhabitants of this island amount to about 200, including women and children. They are fugitives from Cambodia and Cochinchina, whom the love of liberty and independency hath brought to this country. Hitherto they have enjoyed it peaceably, as envy hath not yet excited in their neighbours, or the Europeans, a desire to molest them in their possessions. These people have neither a healthy nor strong look; they are short, lean, very swarthy, industrious just enough to supply their wants; but exceeding slothful, covetous, and selfish, yet extremely poor. As this country is incapable of supplying their necessities in a sufficient manner, they fetch from Cambodia and Cochinchina what is requisite for their subsistence and cloathing; in exchange they carry thither oil, tortoise-shell, a pickle made of a small fish like an anchovy, and flambeaux made of the bark of trees, tore in slips and dipped in the rosin, or dammer, before mentioned, which they bind in a case of the leaves of a wild plant, common enough in this island. This is all that can be said with certainty of P°. Condor: By which it appears this country has nothing engaging enough to induce the making a settlement on it (*k*): And this determined the French company, who, in 1720, had such intentions, to abandon their design.

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DIRECTIONS *for sailing, in the Westerly Monsoons, from SIAM to the River of CAMBODIA, TONQUIN and GHINA, to the Westward of the PARACELS, along the Coast of CAMBODIA, TSIOMPA and COCHINCHINA.*

BEFORE I undertook to give a particular account of these coasts, I carefully examined the several instructions upon this subject, inserted in the English Pilot, and in several Portuguese and Dutch Memoirs; and having compared them with some journals of this navigation communicated to me, I found myself enabled to give a more correct account than former authors have done; and have added thereto some useful observations. Sailing from Siam Bar, in the months of June, July and August, you stand towards the West coast of the gulf, and keep along it as far as Cin Point: From thence steer SE. 'till in the latitude of P°. Panjang, then East, to get a sight of it. This last course is not always necessary, as the currents, which run to the Eastward, often set you in sight of P°. Way and P°. Panjang sooner than you are aware of; therefore proper precautions must be used. You have 30 fathoms just within sight

(*k*) The English settled here in the year 1702, when the factory of Chusan on the coast of China, was broke up: They brought with them some Macassar soldiers, who were hired to assist in building a fort, and to be discharged at the end of 3 years; but the chief not fulfilling his engagement with them, they waited an opportunity, and one night murdered all the English in the fort: Those without the fort hearing a noise, took the alarm and run to their boats, very narrowly escaping with their lives, but not without much fatigue, hunger and thirst, to the Johore dominions, where they were treated with humanity. Some of these afterwards went to form the settlement at Benjar-Masseen, on the Island Borneo.

fight of this island (*l*), which decreases as you come near it. But observe, that this depth is likewise found in many other parts of the gulf, out of sight of the land.

As soon as you have passed P°. Panjang, the course is SEbE. 23 or 24 leagues to P°. Uby, P°. Uby. situate exactly at the Eastern extremity of the gulf of Siam, in 8° 34' North. Its height renders it perceptible at a great distance; it is overspread with various mountains and valleys, or hollows like saddles. Coming from the SW. or Westward, these hills bearing NE. appear separate, (the Southernmost is much higher than the rest, and the Northernmost seems lowest); but when P°. Uby bears North they are in one. You may get fresh water on the North side of this island; but the best anchorage is on the East side, opposite a little bay, the little island at the SE. point bearing South.

Between P°. Panjang and P°. Uby, you have 25, 20, 18 and 16 fathoms: When you get into this last depth, you are near P°. Uby.

Coming from the Westward, when you have 28 or 25 fathoms, you are a good way from it.

It is necessary, that the ships from Batavia, Bantam or Malacca, to the river of Cambodia, as well as from Siam, should make P°. Uby, that they may be far enough to windward to make advantage of the SW. winds, which blow very strong in the months above mentioned, when the currents also set so strong to the Eastward, that, if you fall to leeward, it will be exceeding difficult to regain the coast.

It is reckoned 40 leagues E½N. from P°. Uby to P°. Condor, of which an account has been given in the preceding chapter.

If you are bound to Cambodia, after doubling P°. Uby, in 15 or 16 fathoms, stand to the Northward, to make the continent, and when the Southernmost point of the continent, which Cambodia River. is low and covered with large trees, bears NW. then steer EbN. and ENE. keeping in the depth of 8 or 10 fathoms; mud. About 5 leagues off shore, there is a bank of sand, with no less than 3 fathoms, however, this need not hinder you from continuing your course to the Northward (*m*), as you soon after meet with better soundings, in 5 or 6 fathoms, and you may near the land as far as 4 fathoms, 'till opposite a river, whose banks are planted with trees, higher than on any other part of the coast. This river bears WSW. 22 or 23 leagues from that of Cambodia. From thence, steering NNE. in the above-mentioned depth, you will see the mouth of another river, from whence the coast extends Eastward, as far as that of Cambodia. This coast is extremely low, and without any particular mark; therefore you must keep near it, to observe its bearing, and as soon as you find it vary from East, you may be sure you are off Cambodia river, at the entrance of which you have 5 fathoms. Then you may see two points, and an island in the middle of the channel, and before its mouth two banks, which, with the island, forms a triple passage: The Western one is called the River of Bafach (*n*); the second, between the two banks, has 14 or 15 feet water, hard sand; and the Eastern channel 18 feet in the height of the springs. To go between the two banks, you steer North and NbW. in order to keep the West point on board, near which there are 34 and 36 fathoms, where you may see two little islands, which you must leave on the starboard, to coast the Western shore, for the space of 48 leagues. Thirty leagues above its mouth, the river divides into two branches, one of which is a narrow passage, called Moustique Passage, which you leave to the larboard, and sail through that on the starboard, keeping always on the West side, 'till you front the town. The ships which sail up this river, must be well provided with cables, anchors and hawsers, because they must warp above 50 leagues of the way. These are the directions I find in several memoirs relating to Cambodia river; but still it requires the conduct of a skilful pilot, as absolutely necessary to enter it with safety, on account of the annual shiftings of the banks, which happen in this river, as in all others.

The

(*l*) Pullo Panjang.

(*m*) But allowing it a birth, if in a large ship especially.

(*n*) Or Cassaba.

Crab
Island.

The river of Cambodia has many other mouths to the Northward: Beyond the above mentioned, the coast runs rounding to the NE. as far as a narrow entrance called the Easter Channel; then it trenches NbW. as far as the Japonese channel, off which lies a little island, called Crab Island.

Cape St
James.

NNE. of this last, in $10^{\circ} 35'$ North latitude, is situate Cape St James, or Sinkel-Jacques: This is a high broken land, which may be seen 10 or 11 leagues at sea; and, notwithstanding some rocks or islands near, may be coasted as close as you desire, in 5 or 6 fathoms. The coast beyond it is low, extending NEbE. and forms several sandy bays, with two points, on which are some downs of sand: The land here making in hillocks.

Cow
Island.

To the Northward of the second sandy point, there is a great bay, on the East side whereof is a small island, of a moderate height, called Cow Island.

Brito
Shoal.

Three leagues off this coast, in $10^{\circ} 50'$ North latitude, lies a dangerous shoal, upon which a Portugueze captain, named Matthew de Brito, was shipwrecked: It may be seen a quarter of a league off, in 14 fathoms, gravel and shells: To avoid this danger, you must come no nearer this land than 4 leagues, opposite three little white hills, by the sea-side. The mark to know this shoal by, is a single mountain, highest at the East end, and much lower at the West end, which is peaked, at the foot whereof appears Cow Island, like a little round hillock. When the highest part of this mountain and the hillock appear in one, bearing NbW. the Brito shoal is in the same direction.

Moreover, to avoid this danger with the greatest certainty, you must keep in 16 or 17 fathoms, which will carry you far enough without it.

Ships not bound for the river Cambodia, but only to Tonquin or China, are not obliged to make P°. Uby, nor to approach the coast about the mouths of that river: The foregoing instructions concern those only, who are bound directly thither. It is sufficient for others to see P°. Condor, and from thence, whether passing on the West or East side, stand for Cape St James, and sail along the coast of Tsiompa, observing the following directions to avoid the rocks which lie off it.

From P°. Condor, towards this coast, you have soundings in 20, 25, 16 and 15 fathoms.

About 23 or 24 leagues NE. of P°. Condor, and 12 leagues from Crab Island, you meet with a bank, of 13 fathoms water, discovered by a Dutch sloop.

Tiger's
Island.

Seven leagues NEbE. of Matthew de Brito's reef, you see Tiger's Island, or, as it is called by the Dutch, Steen-Clippen: It is very near a great sandy point on the coast of Tsiompa. Coming from the Northward, this point makes like an island, upon which are several white spots; but the island above mentioned being barren and rocky, makes it easily distinguished from any other point. The channel between them is not navigable, on account of the sand banks and rocks, with which it abounds. These rocks yield a striking representation of a city in ruins, with a square steeple in the middle of it.

The coast between Cow and Tiger Islands forms a great bay, or bight, into which several rivers empty themselves (o).

Here it was that the Galathea frigate, belonging to the French company, landed in 1720. It was commanded by M. le Gac, who was obliged to enter this bay, in hopes of finding water and refreshments: He sent his boat ashore, with two officers, to ask permission of the inhabitants to get some fresh water, and cheapen provisions. On approaching the shore, they were met by a great number of people, proffering to do them service: They sent a proe to conduct them to the entrance of a fine fresh-water river, in which were many boats and small galleys. This was the only part of the coast where they could easily land. Another croud of inhabitants presented themselves here, who made a sign for them to come on shore: The two officers accordingly landed, having first ordered the cox-swain and crew to wait for orders, before they came farther up the river.

(o) For the continuation of the description of this coast, and the islands off it, see p. 95 and 97.

The chief of the inhabitants conducted the officers to a village, upon the banks of this river. About an hour after, a great number of the natives came, and by signs demanded the boat's crew to deliver up their arms, which the cox-swain refused; and perceiving one of the principal men shew the people, with acclamations of joy, the swords of the two officers, which he had taken into his possession, and fearing he should be attacked, unawares, he was about to return on board the ship, to report what had happened; when, immediately, two large boats, armed, went out of the river, to intercept his passage, but he had the good fortune to escape them.

Upon this information, M. Le Gac resolved to man his boats, and oblige these people to restore his two officers: Just as they began to put their design in execution, they saw two country boats, but they would not come within gun-shot: However, the two officers appearing, the boat was dispatched to speak with them; but they were no sooner within hearing, than they (the officers) called out to forbid them to land, and to desire them to conceal their arms, because, upon the least stir they should make, these people threatened to stab them: In fact, they were bound, and had each standing by him an Indian with a naked creise (*p*) in his hand: They also told them, that as soon as they landed they were plundered, and after a deal of ill usage, they had made them pass the night in the sept (*q*). After this relation the country boats returned to shore.

The next day they appeared again, and said that the king of the country, who had been acquainted with the arrival of the ship, would send a missionary to get intelligence from whence it came.

Two days after, the Sieur Gouge, a native of France, born in Picardy, and a missionary, came from the king. He came first into this country in the squadron of M. de Chaumont, in 1685, and had lived there ever since. This good ecclesiastick deserves a particular commendation; his ardent zeal to serve the two prisoners, and the danger he underwent in exposing himself thereby to the resentment of the natives of this country, distinguishes his character as a good man, and worthy of his function.

The day following, the king's son arrived at the village, who being informed of the ill usage shewn to the two officers, came to know the truth thereof; he accordingly heard their complaints, and promised to do them justice, but required that the captain of the ship, or his second, should come ashore: They thought it improper to refuse his request; therefore M. Gravé de le Belliere, second captain, went to him. The prince received him honourably, and told him that the king, his father, had sent him to inform himself of the insults the strangers had received, and to make them a suitable reparation. He afterwards caused them all to be conducted to the house of a mandarin, where a dinner was prepared for them, which was followed by a comedy, in the country taste.

The play ended, the officers were conducted to the audience of the prince, and to be present at the punishment of the criminals. They were led in with the sept about their necks, and caused to sit with their backs to him, as unworthy to face him. After a most severe reprimand for their ill behaviour, he sentenced them to be fined 50,000 cashes, or cash (*r*), and to receive each 50 stripes with a bamboo (*s*) on their breech.

After this execution, M. Gravé had leave to return, on condition, however, of coming again the next day; when they promised to restore the two officers, and to give them the refreshments they came to seek; they also permitted the boat to take in fresh water.

M. Gravé

(*p*) A kind of poniard.

(*q*) A kind of pillory.

(*r*) This sum amounts to 25 French crowns, or 3l. 15s. Sterling.

(*s*) A great reed exceeding hard.

Bambooning in these parts is a punishment in common cases, as whipping is in England, and is thus executed: The criminals are thrown on their backs, their drawers pulled down, and their breech beaten sorely, with a piece of large bamboo, slit, about 3 inches broad: they are sometimes so severely dealt with, that they never rightly recover; yet the shame afterwards is more to them than the present punishment.

M. Gruvé did not think it proper to refuse what was required of him, but went on board, and returned the next day to the prince, who received him very graciously, and invited him and the two officers to dine with him: After the repast, they had another comedy, which was interrupted by a madoye, or courier, from the king, bringing a letter addressed to the prince, expressing, "That his majesty's pleasure was, that the ship should weigh anchor from the road it was then in, and go into a better port, in a great river, 8 or 9 leagues further; and that being desirous of seeing the officers, he required that they should be brought by land to Feneria, where he resided."

This letter served the prince for an excuse from keeping the promise he had made them the day before: They could even scarcely obtain his permission for one of the officers to go on board of the ship, to acquaint the captain with the king's new orders: He granted this, however, but on condition, that the person who went should return the same day; and that they might not suspect the sincerity of his professions, he sent two buffaloes, some hogs, and other refreshments.

It is easy to perceive, by the first request, that they had a mind to seize the ship, by wanting to have it in a place from whence it could not easily get away; but M. Le Gac was too prudent to be caught in this snare: He excused himself, under pretence of contrary winds, and other inconveniences which he represented. Without informing the ship's company of this, he waited to see what they would be at; but resolved not to forsake the two officers 'till the last extremity, who had sacrificed their safety to the common cause.

These, however, could not so easily elude their journey to Feneria. They were obliged to set out, and underwent incredible fatigue: Nevertheless the want of food, the excessive bad roads, and the inconveniences of a sultry climate, were not so intolerable as the cruelty and insolence of their guides. These wretches used them so barbarously, that they were frequently obliged to complain to the prince, who went along with them.

After 9 days march, they at last arrived at Feneria. They were longer going than was necessary, being delayed on divers pretences: They were frequently conducted out of the right road, and then forced to return; they led them also to the shore, to communicate several orders, or give intelligence on board of ship.

On their arrival, they went to the house of the missionary, who spared no pains to accommodate them, and procure them all the help that was in his power, even depriving himself of his own subsistence. Several Christians, in that country, came down to visit them, and brought them provisions while they continued there.

The next day the king sent an officer to tell them, he desired to see them: They went accordingly, accompanied by the missionary, and passed on horseback over a narrow river, but 10 feet deep. They found on the other side a numerous throng, whom curiosity to see them had brought thither. From thence they were conducted to the audience chamber. This building had nothing extraordinary pleasing to the eye; it had neither grandeur of architecture, nor was it richly ornamented: It was only an open hall, consisting of two large edifices without partition, supported by plain pillars of red-wood. The throne, whereon the king was placed, had none of the splendor and magnificence of the Eastern kings, of which many travellers have given such pompous descriptions. This was a plain foot-stool raised and covered with a carpet; behind it was a china varnished screen. The king's dress consisted in a gown of black damask, laced with gold, intermixed with mother-of-pearl, and clasped, and over it a shawl of very fine callico, edged with a gold fringe, upon a narrow gold trimming. His crown was of scarlet cloth without jewels, and only bordered with a narrow gold lace of Japan. He had also little buskins on, which none in the kingdom, besides himself, are permitted to wear.

His body-guard was composed of 12 men, cloathed in red silk, with a turban of the same colour, each of which held a sabre, whose hilt was gilt with gold. At his left-hand were four mandarin loyes, drest like the king, except the buskins, who had also guards. At his right-hand stood

stood a mandarin of Cochinchina, with several other mandarins, and about 200 officers, all placed according to their stations.

They placed the strangers and the missionary at the entrance of the hall. The king, after viewing them some time, caused betel (*t*) to be presented to them, and ordered those about him to say he was overjoyed to see the French, and glad of the opportunity to oblige the subjects of a king, whose grandeur, power, and renown extended even to his dominions. Their answer, full of acknowledgements for his goodness, was interpreted to the king: He expressed his satisfaction, by bowing his head, and withdrew with his attendants.

Soon after they were introduced to the dining-room, where the king and his court were already set at table. The French had one prepared for them, served up with the four quarters of a hog, two boiled and two roasted, some fowls and other meats in the country manner: This first service was succeeded by the white parts of fowls, minced with some sweet-meats. The king ordered them some of his own drink, which they found good: After which they were presented with a comedy.

At the end of the performance, one of the principal mandarins sent to M. Gravé to demand of him 30 necunes, which make 420 Spanish piastras (*u*); he alledged that this sum was to supply the ship with refreshments, and that it was the custom of that place to pay beforehand. Upon a remonstrance that this sum was exorbitant, he reduced it to 5 necunes, or 70 piastras (*x*). But M. Gravé saying he was not in a condition to satisfy him, they permitted him to send an officer on board the ship to fetch the money. In the interim, the king ordered them to ask him if he had a mind to see his palace, which was but a quarter of a league off; he thanked him for the honour of his offer, and withdrew with the rest.

During these feigned courtesies, the mandarins held a council, wherein it was resolved to send to Cambodia for a mandarin skilled in military affairs, to whom should be given the command of several galleys, which they designed to arm, to seize the ship. For this purpose they caused several troops to march along the coast, who should be ready (at a proper place) to embark for this expedition. Happily some Christians made a discovery of this plot to the missionary, who communicated it to M. Gravé, and the captain of the ship, on board which the missionary had orders to accompany the officer, who was gone to fetch the 70 piastras they had agreed for. M. Le Gac, upon this advice, was at a loss what measures to pursue: He first thought of weighing anchor, but was very loth to leave his officers behind; besides, a sudden departure would be of dangerous consequence to the Sieur Gouge and the other officers. The missionary represented that they were liable to be stripped of every thing; that even he himself would not be spared, on supposition of his being accessory to their escape; that then, forsaken and wandering about the country, they would not only be oppressed with misery, but the malicious and unmerciful populace would practice a thousand barbarities upon them, as happened to the crew of a Dutch ship that was lost on this coast, nor would their misfortunes have the least effect upon this cruel people.

It may be easily imagined what terror this discourse had on the people, who were now under the same apprehensions. Upon the return of the Sieur Gouge and the officer, M. Gravé and his companions made new efforts to regain their liberty. They sought the prince, with a view of making strong remonstrances to him, on the manner of their proceeding, with respect to themselves, contrary to honour, and the law of nations. The missionary did not accompany

(*t*) The leaf of a slender tree, eaten, and very much esteemed in this country (and indeed all over the Indies) together with Aracca (a nut not much unlike a nutmeg) and Chinnam (a lime made of burnt shells) which is spread on the leaf, and then about a quarter of the nut wrapt up therein: which by chewing (for it is not eaten) inebriates those, who are not used thereto, like tobacco.

(*u*) Or dollars, which, at 4s. 6d. each, is 94l. 10s. sterling.

(*x*) Or 15l. 15s. sterling.

accompany them this time, judging it more prudent to wait till he was sent for: It happened as he could wish. The prince who could not understand what they said to him, sent for the *Sieur Gouge*, who made a pathetic speech in support of their arguments: He answered, that the manner in which he had acted, with respect to them, was the result of a consultation between the king, the mandarins and himself; that, notwithstanding their interests were dear to him, he desired to be excused from seeing them again, because he was unwilling to incur the displeasure of the mandarins of the council; he received them, however, with great freedom, caused them to eat and drink with him, and was so gallant as to offer them women; but under the anxiety they laboured, the most seducing charms could have no relish, nor excite in them an inclination to lewdness; but even supposing them susceptible of temptation, what impression could be made upon their hearts, by creatures of a complexion so yellow and disagreeable, and whose very aspect was sufficient to disgust the most lascivious! Such objects might rather be supposed to bridle their lust, even though desire had pleaded in their favour; so they declined the prince's offers with thanks.

The same day, towards the evening, the missionary received an order from the chief mandarin, to go on board of the ship, as from him, to require the 30 necunes, or 420 piaftres, according to their first demand, and to command the captain to sail, with his crew, a league above the mouth of Baria River. These orders were very resolutely given, therefore *M. Gravé* and the two officers sent a letter, by him, for *M. Le Gac*, acquainting him therein, that despairing of ever escaping out of the hands of these barbarians, they desired he would sail as soon as he pleased, and that they were resigned to suffer all the hardships of their captivity. *M. Le Gac*, moved with extream sorrow, desired the *Sieur Gouge* to propose to the mandarins the ransom of his officers for the sum they required, that he would leave them four days to consider of it, but at the expiration of that time he would sail.

This proposal was accordingly made to the mandarin; he came immediately to the village, off which the ship lay, to consult with the other mandarins; and at the same time caused the *Sieur Gouge*, *M. Gravé*, and the two officers to come thither also; buoying up the three last with hopes of being sent from thence on board of their own ship: But the missionary learned, by Christians well informed, that the mandarin came to this village to give orders to attack the ship, which he thought well laden with treasure; that his intention was to put the priest and the three officers each in a separate galley, that if the ship should make the least resistance, or any of his people should be killed, he might have an opportunity of sacrificing them to his revenge. Such was the situation of these poor officers, who seemed to have no other visible end to their calamities, but certain death.

They set out accordingly, after recommending themselves to God, and lay the same day within a league of the village where this enterprize was hatching. They found the prince there, whom they saluted, and whose protection they implored: He assured them he would assist at the council, and espouse their cause there, and endeavour to prevent the designs of the mandarins. *M. Gravé* made him a present of his sword, imagining he had a mind to it; the prince accepted the gift, but desired him not to mention it to the mandarins, because he had measures to take with them.

The next day, in the morning, a report of one of the ship's guns was heard: The council ordered *M. Gravé* to be asked the meaning of this; he answered that it was a signal for sailing. Upon this the mandarins entered into a conference with them, when, after many debates on both sides, they agreed to what the zealous missionary had proposed a little warmly, even at the hazard of his own life; that the three officers should embark in a boat with 8 rowers, and that he himself should accompany them on board their ship, to receive the 420 piafters, by way of ransom. They caused also another boat to go with them, under pretence of convoy with 10 or 12 men, armed with sabres and spears, which followed the first. They arrived near the ship at seven o'clock in the evening, when the ship's boat put off to receive them. The

returne

returned the priest a thousand thanks for the care he had employed in such a troublesome affair, and for the happy success of his negotiation; accordingly counted out, to him, the 420 piasters, and he returned ashore.

The morning following, the *Sieur Gouge* came back to the ship with a message from the mandarins, to desire them to send a boat to fetch some buffaloes, hogs, fowls, and other refreshments which they offered them. *M. Le Gac* answered, that he would receive them if they thought proper to send them in a boat of their own, but for his part he was not in an humour to trust again to their caprice either his boat or any of his men. The missionary commended his answer, and having received repeated marks of his friendship, he took his leave. The ship directly set sail for P^o. Condore, where it was ordered to touch at, before it went to China. The detainer of the officers had prolonged them 30 days on the coast of Tsiompa.

Though this relation be not at all essential to my subject, I have inserted it here, in order to give an idea of the character of the inhabitants of this coast (y). Those who have hitherto imagined they might establish advantageous settlements here, have been unacquainted, or greatly misinformed of the temper of these people; and the ships that approach this place may hence be advised to take proper methods to avoid putting in here. *M. Gravé*, who sent the company this relation, whereof this is but an extract, hath described therein the lives and manners of the natives, so far as he had time to inform himself thereof, during his stay there. Perhaps it may not be disagreeable to recount what he says of them, after which I shall go on with the description of the coast, from whence I have made this digression.

The Cochinchinese and Loyes are two distinct people: The former came out of China at the time of its conquest by the Tartars, and resemble the Chinese in their features, their beards and their dress, excepting that they do not cut off their hair (z). They wear in their ceremonies a long black gown, like our lawyers. They value themselves much above other nations, and think themselves more learned and ingenious, though they have a very shallow capacity, since they are absolutely ignorant of trade, or even husbandry, and consequently very poor. Their strength consists in some galleys, each armed with only 40 or 45 men, two small cannon, with muskets, pikes, sabres and sagayes (a), which they use very skilfully. Their officers wear a robe of black silk, open at the sides, with a horse-hair cap in the form of a sugar-loaf, and a tail behind. The soldiers have their sleeves something less, and their cap is of a buffalo's hide, like a helmet, which is said to be a safe proof.

The Loyes are natives of the kingdom of Tsiompa, who maintained a long war against the Cochinchinese, but are at length become tributary, by a treaty of peace concluded between them, about the beginning of this century. The conditions were, that the king of Tsiompa should possess his dominions in tranquillity, but that he should pay homage to the king of Cochinchina, a mandarin of which kingdom was to hold the second place at the royal council of Tsiompa, where nothing could be decided without his consent.

The Loyes are large, nervous, and better made than the Cochinchinese. They are of a reddish complexion, their nose flattish, long and black hair, little whiskers, and a small beard upon their

(y) I really think accounts of the good or bad usage of the natives of any place, are as necessary to be inserted in Directories as marks for rocks, &c. by reason the one may prove of as dangerous consequence as the other, which appears by this relation, and many others that have proved more fatal; and therefore I take this opportunity of adding another caution to those whom it may concern. Not to put into Aden, in the Arabian Gulf, where, in the *Severn*, Capt. Collier, 1745. we met with much the same treatment, and at last were forced to pay upwards of 500 dollars to the Sultan, for what he called anchorage duty, before we got released; besides his detaining a chest of treasure for escorting 4 others through his dominions to those of Mocha, in the Red sea; which, to give him his due, was pretty honest, considering he had all 5 in his power: Though in fact the 500 dollars were paid for a very consideration.

(z) Which the modern Chinese, living under the Tartar government, are obliged to do; and at Batavia they pay a tax of a dollar a month for the indulgence.

(a) Our author might as well have given some explanation, or description, of these weapons, as he has of other things which are much more common and familiar, viz. Rattan, Bamboo, &c.

their chin. Their dress is a long frock and a pair of callico-drawers, over which they wear a white garment in form of a petticoat, with a gold or silk fringe, according to the circumstances of the person. The king's guards and mandarins are clothed differently from those of the Cochinchinese, having, instead of the black robe, a white cabaye (*b*), with a turbant; the officers wearing them a little longer than the soldiers.

The character of these people is very different from that of the others: These are more humane and more affable to strangers, more laborious, and richer, though not so strong by land as the Cochinchinese, whose number is greater; yet by sea the Loyes have the advantage, their galleys being better built: Their boats, in form of tartanes, serve them for fishing, whereof they catch great quantities.

There are among them a cast (*c*) called Moyes, which inhabit the mountains, and are employed at hard labour, like slaves, and wear only a small piece of linen to cover their nakedness.

Both nations have nearly the same laws. They observe great decorum, from the king's mandarins, and those in office, to the lowest class of people; but though policy and law are cried up here, equity and right are excluded. They are punished for the least offence. The common people cannot keep their money to themselves; those on whom any is found are condemned, by the mandarin of the place, to be fined, or receive a severe bastinado. Their money is copper, of the bigness of a French liard (*d*), and is called cash: 100 of them go to an amarade, which is valued at 30 French sols. The office of mandarin is granted to him who presents the greatest sum to the king, and the larger the sum, the greater dignity he has bestowed upon him: But in this they differ, that the Loye mandarins, where they are not rich enough to satisfy their exactions, have alone the privilege of borrowing money, on great interest, of the king's wives, who esteem this method of commerce, it being all their revenue; whence it follows that each of these chiefs gets the most he can in his district, and the subjects are never the better for it.

Religion is free in this country, as in China; those that prevail most are Mahometanism, and the laws of Confucius. Idolatry is likewise practised here, some worshipping animals, others the sun, the moon, the stars, or the firmament. One thing extraordinary is, that the Mahometans eat pork and prostitute their wives, except their lawful one (*e*) whom they cannot put away without having detected her of adultery. The marriages are performed without ceremony, and with very little trouble; the consent of the parties are sufficient, and after it is over they chew betel together: In general they live on nothing but rice and dried fish, and even that half rotten; but they drink a great deal of parjar arrack, and are frequently drunk.

The Southern parts of this country produce a little cotton, indigo and bad silk; so that the inhabitants have no trade but among themselves, of which fishing makes the most considerable part.

On the North coast the Chinese send several ships yearly, laden with tea, the worst sort of silk, china-ware, and other commodities of the country; they take in exchange gold, which is of greater esteem than that of China; they prize also a sweet-scented sort of wood, which grows upon this coast, to burn on the tombs of their relations, and to honour their pousas and images. This commerce was interrupted about 25 years ago, by the ill behaviour of these people to the Chinese, whose ships they plundered and burnt, and refused to make them reparation. From that time they have been cautious of trading thither; and the Loyes have imposed new laws of anchorage, which must be paid before they can traffick; likewise their mandarins, on pretence of measuring the ships, rummage the officers cabins, &c. and take away what they think proper.

(*b*) Here again our author might as well have given some description of this garment.

(*c*) Or sect.

(*d*) Or a farthing.

(*e*) Or first wife.

proper. These impositions are too flagrant to think of carrying on any trade with them; for if they use their neighbours in this manner, what are Europeans to expect? a people wholly unknown to them, and whom they never see except by chance.

Of the Islands lying off the Coast of TSIOMPA (f).

FORTY-SEVEN miles SE. of Tiger Island, in $10^{\circ} 32'$ North latitude, lies P°. Cecir, surnamed de Mer, or of the Sea (g), to distinguish it from the other Cecir near shore (b), and 8 leagues distant from the said Tiger Island. Cecir de Mer lies NE. and SW. about 2 leagues in length: The land is dry and barren, of a yellowish colour: The middle rises in a mountain, to the Southward of which are several hillocks. About three-quarters of a league from the NW. point there is a large rock, and within gun-shot of the NE. point a little island, whose soil is reddish. It is surrounded with rocks, both above and under water; and a sand-bank reaches from these rocks to the little island.

P°. Cecir
de Mer.

Half-way between Tiger Island and P°. Cecir de Mer lies the bank of the Court of Holland, whose shoalest part, according to report, hath but 4 fathoms water (i). In returning from China, I anchored, as I observed in the note (g), close to it, in 25 fathoms, small stones; from thence, having seen and stood towards P°. Cecir de Mer, I found that the North part thereof bears NNW. off this island. Ships from the Northward or Southward may avoid this bank, by sailing along P°. Cecir de Mer, at 2 leagues distance, and in a fine channel like that between this bank and the coast of Tsiompa, where you have 23 or 24 fathoms, sand mixed with small stones.

Court of
Holland.

ENE. of P°. Cecir de Mer, distance 17 leagues, there is an island, with two lesser ones (k), which some navigators call the Three Brothers. It is of a middling height, and from the South point thereof projects a reef.

The
Three
Brothers.

NE.

(f) Continued from Page 88.

(g) The distance from this island to the coast of Tsiompa, and its latitude, are agreeable to the observations I made in 1738; returning from China, in the ship Prince de Conti. An unforeseen error, occasioned by the currents, detained us in this channel; they drove us in a very short time in sight of the continent, at the time when we reckoned ourselves off the islands. The 17th of January, after observing in $10^{\circ} 58'$ North latitude, and steering a league and a half SW. we saw the coast of Tsiompa bearing NW. and afterwards P°. Cecir de Mer SSW. Having seen these lands; the night, which came on, prevented our attempting to pass the bank of the Court of Holland, as we were uncertain of its true situation, the old charts and the opinion of navigators differing so widely; we therefore stood off and on with an easy sail all night, waiting for day-light to pass the danger. We sounded 38 fathoms, grey sand, and according to the course steered, which was about NW. we should have increased that depth, according to the charts, but on the contrary we experienced a gradual decrease, so that at mid-night, finding ourselves in 25 fathoms, rocky ground, we anchored, fearing the currents might drive us upon the shoal. At day-break we found we were upon its North edge, from whence P°. Cecir de Mer bore SE. 7 or 8 leagues distance, whereby we discovered the true situation of this danger, and this enabled me to adjust it on my chart. Weighing from this place we neared the continent, within 4 leagues, and afterwards steered towards P°. Condore.

(b) And named on that account P°. Cecir de Terre.

(i) It is great pity that having so fine an opportunity, as may not happen again in an age, that bank was not thoroughly examined; for if there is no less than 4 fathoms as above related, on report, there is water enough for any ship, and there is no need to lose time in lying by for it; and perhaps, by avoiding this imaginary danger, be horsed by the currents, which are here exceeding rapid, upon a real one: And it were much to be wished that commanders had orders, on such like occasions, to cause an ample survey to be made, which would be of great advantage to navigation in general; nor might it affect private interest so much as some may imagine.

(k) The English Pilot says concerning these islands, "That about 20 miles distance from P°. Cecir de Mer, on the East course, lies another, between which two is foul ground; and from the South side of the Westernmost of these two stretches a ledge of rocks to the offing;" by which it seems as if he meant here Rabo de Lacra, or the Scorpion's Tail: If so, he is mistaken in the bearing of these two islands, which do not bear ENB. but NE. My assertion is founded on the journal of the ship L'Argonaute, which in 1730, on its return from China, made the Northernmost island, bearing from NW. to WbN. distance about 5 leagues. It appeared (especially in the middle) of a height that might be seen 10 leagues at sea. He observed at the same time in the latitude of $11^{\circ} 5'$ from which it may be concluded, that this island lies in $11^{\circ} 10'$ as I have placed it in my chart. From hence he steered first SW. then SWbS. and at a quarter after 4 o'clock saw the other island bearing WSW. distance 5 leagues; and at 3 quarters after 5 it bore from W½S. to WSW½W. 3 or 4 leagues. This last appeared low, even, and had on its North point two hills, which he took for islands at a distance.

Now

NE. 15 leagues from this last, in $11^{\circ} 10' N.$ there is a small island, a little higher. All the old charts draw from one to the other a dotted line, to represent the ridge of a bank, which seems to indicate that the bottom between these two islands is dangerous. The Portuguese call this bank and the islands Rabo de Lacra, or the Scorpion's Tail.

Po. Sapata
or Shoal
Island.

Ten leagues South of the Three Brothers (*l*) are two other little islands, and a great rock above water, which the English call John Catwicks, and the Portuguese P°. Sapata (*m*), from a resemblance the Easternmost island has thereto, at certain bearings (*n*). Almost all the ships bound to China, the Philippines, or Japan, after P°. Condore, endeavour to make P°. Sapata, to shape their course with greater certainty; and avoid the rock of Andrade, which most navigators place at the distance of 18 leagues EbN. from P°. Sapata.

Milde-
burg Bank.

SSE. of P°. Sapata lies the bank of Mildeburg (*o*); it extends only a quarter of a league in length, from E. to W. according to the journal of a navigator who saw it in returning from Manilla; he saw the sea break there, and found 7 fathoms water on its Westernmost point.

The Paracels (*p*) is a great rocky bank, extending from North to South, off the coast of Cochinchina, according to most charts 92 leagues in length, from $12^{\circ} 10'$ to $16^{\circ} 45'$ North latitude, and 20 leagues in breadth. We have been informed, within these few years, that this space is filled with several islands of different sizes, with sand-banks and rocks in many parts of it.

A Se-

Now by working the ship's run, I find that this island lies SW. of the former, distance about 15 or 16 leagues: But this journal makes no mention of the foul ground between these islands. It is true that as they passed without, they might not perceive it. I conclude from hence, that this danger doth not lie so far off as most charts represent. By their run from these towards P°. Condore, it is evident that these islands are the same which are commonly called Rabo de Lacra.

(*l*) The bearings and distances of the Three Brothers with P°. Sapata, are taken from a journal of the Sieur Bern, in a voyage that he made to Manilla, in 1724. This navigator, very exact in his remarks, thought he saw P°. Sapata, and to be sure thereof, he passed to the Westward of the little island situate WNW. of that in the shape of a shoe, and when it bore South, about 2 leagues, he saw the Three Brothers bearing NNE, upon which he stood towards them.

(*m*) Or Shoe Island.

(*n*) It lies in latitude $9^{\circ} 58' N.$

(*o*) Or Middlebourg.

(*p*) The Paracels, as I have placed them in my charts, were copied from a plan drawn by a Portuguese pilot, or mate, who sailed a long time in the Cochinchinese vessels, and made several voyages over this bank. I cannot affirm that it is very correct, because a pilot (in the condition of him above mentioned) has not always the necessary instruments to draw a plan accurately; so that I would not have navigators depend thereon for crossing it: But, however, it gives a different idea from the old charts, which encompass it round with rocks, and leave all within void of islands.

As for those which most charts place from the South point of the Paracels to Rabo de Lacra, there is no such thing: I was convinced of this by the track which the currents obliged us to make in the ship Prince de Conti before mentioned.

Here follow my reasons for omitting them:

Sailing from Canton River, in company with the ship Condé, on the 9th of January, 1738, we took our departure from the Grand Ladroon, bearing NNE $\frac{1}{2}$ E. 7 leagues, and steered a proper course, to get to the Eastward of the Spectacles, passing very near the English Bank, or Macclesfield Shoal: Having passed the latitude thereof, we steered first SWbS. then SW. to get sight of P°. Sapata. We sailed thus in company till the 13th of the same month, when we lost sight of our consort, being then in $12^{\circ} 30' N.$ latitude. This ship made P°. Sapata on the 16th, and by their estimation, which agrees with my chart, it is plain he found no considerable difference in this land-fall. We, on the contrary, after we were separated, intending to make the same place, were transported by the currents in such a manner, that, on the 17th, we fell in with the coast of Tsiompa, as before mentioned; reckoning ourselves at this time 22 leagues further to the Eastward: but what is more extraordinary, this difference happened only in the run we made after our separation from the ship Condé, which, by computation, amounted to 94 leagues.

If you set off upon the chart the place we were in when we lost sight of the ship Condé, and that wherein we found ourselves when we made the coast of Tsiompa, you will see that our true course was SW $\frac{1}{2}$ W. 94 leagues, instead of which we reckoned SW $\frac{1}{2}$ S. 78 leagues; so that we passed between the South point of the Paracels and the Northernmost island of Rabo de Lacra, but at a greater distance from the latter than the former, so that it might be expected that we should run foul of, or at least see something of the islands, which the charts make, as it were, in a chain; for if you suppose they are so low as not to be perceived 4 leagues, at which distance you may see even a rock, you may conclude they do not exist at all, since in very clear weather we could see nothing of them.

Not to omit these islands wholly, I have laid them down according to the true course sailed in the night-time, because when it is dark it is possible to sail very near an island, and yet not see it; but this affair does no more favour to the old charts than afford authority to omit them.

I must not forget to mention, that the mistake in our computation, in making the coast of Tsiompa, appeared much more considerable by following the old charts, which make the meridian distance between the Grand Ladroon and P°. Sapata much greater than it should be, as I shall demonstrate in the directions for sailing from Europe to China. Page 104, &c.



*A Sequel (e) of the DESCRIPTION of the Coasts of TSIOMPA
and COCHINCHINA.*

EIGHT leagues ENE. of Tiger Island lies P°. Cecir de Terre, about 5 miles off the P°. Cecir de Terre. high Cape Cecir; It is low barren land, and surrounded with rocks both above and under water.

Between Tiger Island and P°. Cecir de Terre there is a large bay, which extends NNE. about 4½ leagues, as far as Boden River. This would be a good place for refreshments, if the people were of a more sociable disposition. At the SW. point of this bay, and about 5 miles to the Northward of Sandy Point, there is fresh water. When Cecir Bay bears WbN½N. 6 or 7 leagues, you may see to the Northward two or three little hills, like sugar-loaves, and on the South side a long ledge of sand, which reaches, as it were, along the coast to the Sandy Point; these marks make this bay easily known from the others.

Near Cape Cecir there is a dangerous reef, called Breda's Shoal, projecting out from P°. Cecir de Terre. To avoid it, you must pass 3 leagues without this island, for nearer the water shoals, and the bottom grows foul.

Between the bank of the Court of Holland and that of Matthew de Brito, you have 20 and 22 fathoms, at 4½ leagues off shore. If thence you steer NE. and NEbN. you have but 15 and 12 fathoms, sand mixed with small stones, and then Tiger Island bears NW. If the course be continued, the depth increases again to 18 fathoms off Cecir Bay, and gradually to 24 about 3 leagues off P°. Cecir de Terre, sometimes sand and sometimes stony soundings.

If you sail 1½ league off shore, within the bank of Matthew de Brito, you have 9 and 10 fathoms, as far as Tiger Island, and from thence to P°. Cecir it deepens presently from 10, to 14 and 15 fathoms, then it shoals again (if you continue to sail along shore) to 10, 9, and 8; and within Cecir Bay to 6 fathoms.

Padaran Bay lies in 11° 25' North latitude, about 10 or 11 leagues to the N. Eastward of P°. Cecir de Terre; and further on, in 11° 47' is the False Cape Varella or Avarillo: It is high, with a rock at the top of it, like a centry-box. The Portuguese gave it this name to distinguish it from another to the Northward, very much alike. Close by the high land there is a long valley of sand.

Between Padaran Bay and the False Varella, there is a bay extending NbW. whose bottom is exceeding foul; and at its mouth there is an island equally encompassed with danger.

The entrance of Comorin Bay is to the Northward of the False Cape Varella, and extends NWbW. Going in you find 40, 35, and 30 fathoms. The NW. side is very rocky and full of shoals; and the adjacent lands appear double, with many points and bays.

About 9 leagues from the False Cape Varella lies the South point of Wessen's bay: It is known by whitish spots upon the land, to the Southward thereof; as also by several islands near it, whereof Fisher's is the most remarkable: It lies very near the North point of the bay, and seems very barren. Near this bay you perceive, to the Westward, a hill, which in clear weather resembles Cape Varella, but it lies more Southerly, and generally is obscured by the clouds.

Pagoda Bay lies a little to the Northward of Fisher's Island, as do those of St. Phillip, or John Phipps's Bay, and Scutins, or Schuyten Bay, which seem barren. Hereabouts the land is of a moderate height and steep, but up in the country the land is higher. Between this bay and Cape Varella you may see, on the land, several downs of white sand.

The

True
Cape Va-
rella, or
Avarillo.

The True Cape Varella (named thus by the Portuguese) is situate in the latitude of $13^{\circ} 7'$ or $8' N.$ and is known by a high hill, on the top whereof is a rock, like a pyramid or tower, which may be seen at a great distance, either from the Northward or the Southward; beyond which the coast forms a bight or great bay, whose whole extent is not visible 'till you are past the cape: It is said that its bottom is good and safe, in 15 fathoms, and that you may take in fresh water there; but you must be greatly on your guard, on account of the inhabitants, who are all thieves and treacherous.

Po. Cam-
bir de
Terre.

Nine leagues to the Northward of Cape Varella you meet with P^o. Cambir de Terre, which is a long and low island, about $1\frac{1}{2}$ league from the main, and is known by the spots of different colours of its soil. To the Southward thereof is a rock, on the top of which are four great stones, standing upright, which seem to have been placed with great order and exactness. You may anchor in 12 fathoms, sand, between the continent and the island, and take in fresh water out of a great river, which empties itself near P^o. Cambir. The coast, hereabouts, trenches a little more to the Westward.

Coming from the Northward, as you near P^o. Cambir, you will see a hill like that on Cape Varella; but that is further, and different in this, that when it bears SWbW $\frac{1}{2}$ W. you may see another little hillock to the Northward thereof.

Po. Cam-
bir de Mer
Chinchen
Bay.

ENE. 15 leagues off P^o. Cambir de Terre, upon the edge of the Paracels, lies a little island, called P^o. Cambir de Mer.

Chinchen bay, whose North point is situate in $13^{\circ} 52'$ North latitude, is very extensive: It is known by great a rock, which rises like a steeple (*p*) out of the water, and by several hummocks a little to the Northward, resembling islands. When you have the bay open, and it bears West about 3 leagues distance, you may see there two rocks, the Southernmost of which is divided into three, by which it may be easily known.

To the Northward of Chinchen Bay you find the entrance of a large river, beyond which the coast extends NNW. and forms a bay full of islands and rocks. On the North side are several downs of sand, which may be seen a great way off at sea.

Po. Can-
ton, Can-
toan, or
Cantin.

P^o. Canton is in the latitude of $15^{\circ} 40' N.$ about 10 miles from the continent; it is about 3 leagues long, being high at each end, and low in the middle, which makes it mistaken, at a distance, for two islands. From the SE. part there runs out a reef, for a long cannon-shot, on which the sea breaks. There are many dangers surround this island, the bottom is foul, and therefore ships should not approach it too near.

You may sail between the continent, or Cape Bethang and P^o. Canton, in good soundings of 30 or 40 fathoms. To the Southward of Cape Bethang there are several rocks, both above and under water; but keeping in the above depth you have nothing to fear.

On P^o. Canton there is fresh water, but the difficulty is to land there; whereas on the continent opposite the island, there is a spacious river, with 5 or 6 fathoms water. Salan-Buigh, a town, situate on its South point, may be seen 12 or 13 leagues. This coast, and the parts adjacent, are very populous.

Two leagues NNW. of P^o. Canton, there is a small flat island, whose coast is very foul; but there is a good passage between these islands and the main.

Campella
or Cam-
ponella
Island.

NWbN. about 16 leagues along shore, lies Campella or Camponella Island, in $16^{\circ} 25'$ North latitude: It is pretty large and high, extending NNW. and SSE. Upon it are two high mountains (the Southernmost is the highest) and in the middle a valley full of trees. You may get fresh water on the Western coast, next the continent, from which this island is about 2 leagues distance, where you may anchor in small bays, very convenient for that purpose.

(*p*) As steeples are of various forms, our Author has left us in the dark what idea to form of it. I consulted the English Pilot, in hopes of finding some explanation there, who informs us (in page 60, of the edition of 1750) "That it is like a coney steeple," by which I must own I am little the wiser; unless I am right in my conjecture, that he means a cone or spire steeple.

The shore, on the continent, is low and sandy. At the NW. point of the island are three little islands, one of which is very high, and at the SE. point is another less.

SE. about 3 leagues, there is another middling island, called the False Campella, from the SE. end whereof projects a reef. To the Westward of Campella Island, upon the continent, you see the entrance of Touran Bay: We have no certain knowledge of this port, though it is the most trading one on the coast of Quinam, because the Chinese, Tonquinese, and the neighbouring natives, are the only people trading thither. False Campella.
Touran Bay.

Farther within the bay of Tonquin than the Campella's, on the coast of Quinam and Tonquin, the places are but little frequented by Europeans. The descriptions I have met with of these coasts, are reduced to some few instructions not particular enough to be of any use, except the account they give of two rivers, which empty themselves into this bay; one situate in $20^{\circ} 6' N.$ which the Chinese and Siamese usually frequent; the other, 20 leagues to the N. Eastward thereof, in $20^{\circ} 45' N.$ It was in this last, being the deepest, that the French, English, Dutch, and Portuguese formerly traded. This is what I have collected from the journals of those who have made this voyage.

In the bay of Tonquin you have regular soundings all over; in the middle are 40 and 45 fathoms, black sand and oaze, and on the West side red sand, with some oaze also; the depth decreasing gradually towards the shore. Bay of Tonquin.

The West coast of the Island Hai-Nan bounds the bay on the East side. This island is large, and the land very high: It extends about 50 leagues from SW. to NE. and is 30 in breadth. On the South and SE. sides are some ports, said to be very commodious. I would not, however, advise you to enter them without a pilot of the place, who always offer their service to those ships which they see approach their coast. Hai-Nan Island.

The West coast of Hai-Nan Island, which faces the bay of Tonquin, is encompassed with several banks; but you may easily discover the approach thereunto, by a pretty regular decrease of the depth. If you keep sounding, and do not come under 15 fathoms, you have nothing to fear. Upon this coast there is a high mountain, which may be seen 20 or 25 leagues at sea. When it bears East it appears craggy, and forms several points of different shape and height.

When the ships bound for Tonquin are to the Northward of Campella Island above mentioned, they need not keep any further along the West coast of Quinam; but from thence steer NW. having regard to the tides, lest they set you to the Southward of Hai-Nan Island, or on the banks off the West coast: In the first case, the sight of land, and in the second, the soundings will enable you to prevent these inconveniencies, by steering a different course from that just prescribed.

As soon as you are in the latitude of $19^{\circ} N.$ and in 28 or 30 fathoms, if you have not seen Hai-Nan Island, steer NbW. to make the NE. (g) Islands, the Southernmost of which lies in $20^{\circ} 35' N.$ North latitude, 13 leagues ESE. of the principal river of Tonquin: They are of a middling height. In this course you must also allow for the tides, which sometimes set down the bay: If you be driven thither, and obliged to beat up again, you must not come nearer the bank, which lies off the coast, than 8 fathoms; and you must be careful of this likewise, as you come nigh the river. Towards the Northward there is a great mountain in a straight line, called the Elephant; it serves for a leading mark to the anchorage: When it bears NWbN. stand to the Westward, to get into 6 fathoms, which you will find about a league without the bar; and when the Little Island Perel bears NNE. about a league, you may anchor. NE. or Norway Islands.
Perel or Pearl Island.

The fishermen, inhabitants of the little village called Basta, whose situation is advantageous for the discovery of ships, serve as pilots to enter the river: They come on board upon the first notice of firing a gun; but if the ship is pretty large they will not venture to carry it up, except in the height of the springs.

The

The mouth of the river is about 2 miles wide, and the channel over the bar half a mile. When the flood comes in, it causes very dangerous eddies between the banks. During the months of May, June, and July, the water rises but 15 or 16 feet upon the bar, in the height of the springs; but in November, December, and January, 26 or 27 feet.

The river is not so wide within as at the entrance. It is about 5 or 6 leagues up this river, at a village called Domea, where the Dutch ships generally lie, but the trade is carried on higher up, about 100 miles from the river's mouth, where it is difficult sailing up in a large ship.

About 8 or 10 leagues from Perel Island, above mentioned, begins a cluster of islands and banks, which extends all along the coast, from $20^{\circ} 20'$ to $21^{\circ} 20'$ North latitude.

You must sail from Tonquin River at the beginning, or at least by the middle of November, when the Northerly wind blows fresh; but at the end of this month, as they come from the East, and ESE. they are against you, and you will be obliged to stay till the end of December, or beginning of January, before you can get out of the bay, and then they blow from NNE. to East, being a continuation of the Eastern monsoon; when the currents run to the Southward (r).

Having got over the bar, you steer across the bay, and endeavour to get sight of P^r. Campella; thence continue your course along the coast, from which you must keep at a good distance, on account of its being a lee shore, which may puzzle ships to weather the Easternmost points and capes.

The PASSAGE to CHINA, between the ISLAND HAI-NAN and the PARACELS.

INSTEAD of Tonquin, if you are bound to China, you must keep along the coast of Cochinchina, till you get sight of the islands of Campella, before you cross over to Hai-Nan Island: By this means you prevent the effects of the currents, which coming out of Tonquin Bay set strong to the Eastward during the Western monsoon. From within sight of these islands you steer NEbN. to make the SE. part of Hai-Nan. You have soundings in 70 and 80 fathoms, 10 or 11 leagues off; and at 6 or 7 leagues 50 or 60 fathoms. When you make this island coming from the Southward, you do not directly see any thing remarkable, except Tinhosa Island, which is the largest among many others upon the coast; having on its West part a steep hill, which on the East side slopes gradually to a point. They say that at the foot of the hill, on the West side, is a little bay. The latitude of this island is $18^{\circ} 45' N$. When Tinhosa bears NW $\frac{1}{2}$ W. about 7 leagues, in 60 fathoms, you perceive, upon the Island Hai-Nan, three very high mountains, the Westernmost of which has on the top of it two hummocks, and the Easternmost two others.

Island
Tinhosa.

Tinhosa
Falsa.

Eight leagues NEbN. off Tinhosa, is an island of a middling size, near the coast of Hai-Nan, called Tinhosa Falsa, whose North point makes like a quoin. The islands between them are neither near so large, or so high; the interior part of Hai-Nan is all very high, and when the East point of Hai-Nan bears NW. 7 or 8 leagues, it appears steep, mountainous and cragged: Among the rest there is a very high mountain, which terminates with a very remarkable round bluff (s). The North part of this island is not so high as the Eastern.

From

(*) From 30 to 60 miles in the 24 hours, as was experienced by the True Briton and Warwick, in December, 1751.

(.) The English Pilot says, "with a gap on the top of it, which seems like an island."

From Tinhosa Falsa to the East point of Hai-Nan, there are several islands along the coast; as also between this and the true Island Tinhosa.

The Islands of P°. Tayas are low and barren: There are 9 or 10 of them, besides several rocks; P°. Tayas. the Northernmost is situate in $19^{\circ}42'N.$ and 11 leagues to the Eastward of the Northernmost part of Hai-Nan: (on occasion) you may pass between them; but at present it will be sufficient to leave them 4 or 5 leagues to the Westward. From hence to the Island Sanciam (t) the course is NNE $\frac{1}{2}$ E. about 45 leagues: The latitude of the South point thereof has been observed $21^{\circ}32'N.$ to the Eastward of which lies P°. Outchou (u), a little island very high, which is separated from it by a very small passage. You may easily know your approach to these islands by the soundings, which you find a good way off. St John's. P°. Outchou.

If you fall to the Westward of Sanciam Island and the False Sanciam, which is next it on that side, there is a rock, which at first sight you will be apt to take for a sail; but at the distance of 3 leagues it has the appearance of a little pyramid, and is called the Mandarin's Cap. As soon as you get sight of it stand to the Eastward, going to the Southward of the two Sanciams and P°. Outchou: The extremities of the former lie about East and West of each other, and the latter NEbE. of the South point of the True Sanciam. Having passed P°. Outchou, you may see from the NW. to NE. several islands exceeding high, double, triple, and diversly shaped, forming between them several passages or channels; the principal, and that which you should prefer to sail to Macao (v) lies NE. and NEbE. The first island which appears in this bearing of P°. Outchou is called Deer Island, whose SW. end is high and rugged, with some remarkable white spots at the foot thereof. Between Sanciam and Deer Island is a great bay, and quite close to the latter some rocks above water, which are encompassed by others underneath. You must not approach them, but continue your course to go without this whole row of islands. Next beyond Deer Island is that of Mirou (x). When it bears NW. (y) you discover at its East point a white spot, which has the shape of a mizzen, or sloop's sail, by which it is known. Deer Island. Island Mirou or Merv.

The soundings are mostly mud hereabouts: From P°. Outchou the depth is from 24 to 17 fathoms: and beyond Mirou Island, towards Macao, it is less.

In sailing towards Mirou Island, you see to the Eastward the Ladroons or Thieves Islands, which, with those of Lema (z), form an Archipelago, extending to the Northward and the Eastward. The Southernmost island, near the channel of Macao, is called the Great Ladroon, because it is larger than the others. A high mountain, round at top, rises in the middle of it, and discovers it afar off. Very near it is another island of a middling size, being separated only by a narrow channel, called the Little Ladroon. Ladroons or Thieves Islands.

Two leagues NW. of this island there lies a little one, called by some Potri (a), and by others the Middle Island. This last name was given it, because of all the Ladroon Islands this is the outermost in the channel: It forms two little hillocks, and is encompassed with rocks above and under water, projecting a good way out, which oblige ships to keep off them; so that it is better to sail along the larboard islands than those on the starboard; coasting about three quarters of a league from the Enciades, Cham-chau, and Cao Islands, as far as the Road of Macao, where you may anchor in 5 or 6 fathoms, sand and mud, the town bearing NWbW. $1\frac{1}{2}$ league, and the fort on the hill NW $\frac{1}{2}$ W. The ships that stay here go further in; but this road is sufficient for those bound to Canton, who only want to take in Chinese pilots to go up the river. Island Potri, or the Middle Island.

INSTRUC-

(t) Sanciam and Outchou are Chinese names for two islands, the former of which is known better perhaps by the name of St John's, and the latter by that of P°. Baby.

(u) Or Macow.

(x) By some called Kollong or Coang:

(y) Others say, when it bears W. and W $\frac{1}{2}$ N. and that it changes into the shape of a mizzen, at all other bearings it can be seen, which is but very few, occasioned by the intervention of a small island, that lies off it.

(z) Or Leehmo.

(a) Or Pottee.

**INSTRUCTIONS for sailing from the Island SANCIAM,
or St. JOHN's, to AMOY, with the Description of the Coast of
CHINA from one to the other.**

White
Rock.

WHEN you are in 30 fathoms to the S. Eastward, and within sight of Sanciam Island, steer ENE. to get to the Southward of the great Ladroon Island, in which course you will pass the Lema (b) Islands, which are not far to the Eastward, and having passed them continue the same course, to get sight of Pedro Blanco or the White Rock, 12 or 13 leagues distant therefrom. This is a little island or great rock, high, steep, and situate in $22^{\circ} 6' N.$ which is easily known by its whiteness and distance off the coast: It is safe all round, so that you may pass it by day or night without danger, either within or without, as you like best. The soundings to the Southward are 25 and 30 fathoms, and to the Northward, in the middle of the channel, 20 and 15 fathoms.

Harling's
Bay.

About 4 leagues North of the White Rock lies a point, to the Northward of which is Harling's (c) Bay, where is good anchorage. To enter it you must go without the island near the continent; there are also two rocks at going in, which you may pass on either side: The soundings are good all over the bay, where you may anchor in 10, 8, or 6 fathoms.

Opposite the bay, or as soon as you have entered it, you may see to the West a little South-erly, $2\frac{1}{2}$ or 3 leagues distance, several islands near shore, which are not perfectly known; also to the Eastward of the foresaid point there is a bay or inlet extending to the Northward, where small Chinese junks frequent.

Beais or
Beias Bay.

The Bay of Bear, or of Beais (d), lies NNW. of the White Rock (e): The Chinese call it (f) the Ti-el-zo: It is full of rocks and little islands; but there is no anchorage, unless it be under the West point of the island (g), which affords shelter from the SW. winds.

Brandon's
Bay.

ENE. of Beais Bay lies that of Brandon's, in which you have good soundings from 4 to 7 fathoms. In coming from the SSE. or East, if you would enter this bay by the East point, (where is fresh water) you must sail close to it, and steer North, in soundings from 10 to 6 fathoms, soft mud; you have 4 fathoms passing by two little islands (bearing WbS. of the said point) and some other small islands near shore: I would advise you not to go between the two islands, because there is foul ground; but to keep on the North side of the bay, where you have shelter from all winds.

Cranmeis
Bay.

To the Eastward of the East point of Brandon's Bay is that of Cranmeis (b), where are good roads, in 8 or 10 fathoms, which shelter from the Northerly winds. To the Eastward of this last lies that of Pissoang or Sihare, otherwise called the Great Bay: Its entrance is narrow, but very passable; and within, it affords shelter from the Southerly winds, in 6 or 7 fathoms, good ground.

Pissoang
or Sihare
Bay.

From Cranmeis Bay to the Great Bay, you may sail between the islands which lie before the bay, that is to say, by leaving two islands to the starboard, and another larger one on the larboard: You may also pass safely between the two islands and the point of Cranmeis Bay.

(b) Or Leemho.

(c) Or Harlem.

(d) Or Beias.

(e) Distance 10 leagues.

(f) Beias.

(g) Here seems to be some mistake, which I imagine to be this; that instead of the West point of the island it should be the West point of the bay; for there is no particular island mentioned: Or else *the* must be taken emphatically for the principal or largest island.

(h) Or Cranmer's.

Bay (i). If you would go without the island (k), in the channel, between this point and Piffoang, you must steer EbN. and East 4 miles, then North, 'till you are opposite Piffoang, which is 4 miles more; but those who pass within the island must take care of the rocks which border the coast.

About 2 leagues from Piffoang or the Great Bay, lies that of Groaning (l), in which is a good shelter from the NE. monsoons, provided you are within the island which lies in the offing (m). You must not come too near the East point, by reason of a reef projecting a good way out. Groaning Bay.

ENE. about 14 miles from Groaning Bay lies that of Reyorson (n), where you are sheltered from the Northerly winds, in 9, 8, 7, 6, and 5 fathoms, good ground. Going in you pass close to the island at the East point; minding your lead on account of the foul ground which surrounds it. There are several islands between Groaning Bay and that of Reyorson, between which it is affirmed the passage is navigable in good soundings, from 10 to 4 fathoms. Reyorson's Bay.

It is reckoned about 12 leagues ENE. from Reyorson Bay to a point of land, with very remarkable downs of sand: The depth between them is from 8 to 12, 14 and 15 fathoms. To the S. Westward of this point is a rock above water, and about a gun-shot therefrom several others, which may be seen at half tide. Point of Sand Banks.

Naffowire (o) Bay is between that of Reyorson and the Downs of Sand; as is a little hill, called Black Mount. Naffowire Bay.

It is nearly 5 leagues NE. from the Sand Hills to the SW. point of Wiringer (p) Bay. These two points shelter from the Northerly winds, in a sandy bay, where you may anchor in 10 or 12 fathoms: You may also anchor under shelter from the SSW. winds, behind an island; but as it is encompassed with foul ground you must come no nearer than 9 fathoms: A little to the Northward of this is Tefoe or the Dry Bay, under the NE. point whereof you have good anchorage. Wiringer Bay.

From Wiringer Bay to the Cape of Good Hope (q) the course is NE. and NEbE. $6\frac{1}{2}$ or 7 leagues. This cape is very high and encompassed with low land. On the West side there is a great wide bay (r), called Ornefis (s), where you may anchor, under shelter from the Northerly winds, in 6 or 7 fathoms: Also to the Northward of the Cape of Good Hope is another shelter from the Southerly winds, affording a good road in 5 or 6 fathoms, between two islands, about 2 miles asunder, but surrounded with dangers. Cape of Good Hope. - Ornefis or Orange Bay.

As soon as you have the Cape of Good Hope bearing NW. 4 or 5 leagues, the best course for going to Amoy will be to steer E $\frac{1}{2}$ N. in order to pass without a little cluster of islands and rocks, called the Lamoch Islands, bearing from the said cape EbN. 13 leagues, and situate in $23^{\circ}8'N$. These islands are very small and low, lying about 4 leagues SSE. from Lamond Island, near the continent: They say that you may pass between this last and the others; but think it more prudent (when not obliged to do it) to keep off them: It will be even proper to be sure of being well to the Eastward of them, before you stand to the Northward, especially in the night-time, for fear of running on them in the dark; and when you

(i) Here appears to be either another mistake or great neglect; for if the two smaller islands are directed to be left on the starboard and, going into the great bay, this is in fact but describing the same thing over again: Therefore it remains a doubt whether he means, that you may also pass safely between the two smaller islands, and the East part of the Great Bay; or that he has mistaken his starboard for the larboard hand; or else, that there are two other small islands off Cranmeis Bay; which, if so, ought to have been mentioned in the description of that bay: The chart seems to countenance this latter opinion; but this is a very ambiguous way of giving instructions, without first describing the particulars referred to. If I understood his meaning right, it should be read thus: "From Cranmeis Bay to the Great Bay, you may sail between the three islands which lie before the Great Bay; i. e. by leaving two islands to the starboard, and another larger one on the larboard. You may also pass safely between two other small islands that lie before Cranmeis Bay, and the Eastern point of the said Bay."

(k) This I take to be intended for the larger island before mentioned, lying on the West side of the Great Bay; and seeming'y, by the art, too near the shore to form an eligible passage.

(l) Or Groenigen.

(m) Near the East point of the bay.

(n) Or Reyensen.

(o) Or Naffowen's.

(p) Or Weringer's.

(q) Called also Phijo and Pitto.

(r) Or bight.

(s) Or Orensis, also Orange Bay.

Chapel
Island.

you are without them steer NEbN. or a little more Northernly, if you find that the current sets to the Eastward; this will bring you in sight of Chapel Island, or the Hole in the Wall, lying in $24^{\circ} 10'$ N. and SSW. from the mouth of Amoy Harbour: You may easily know it, and when it bears ENE. or WSW. you may see through it (t), for which reason it is called Pierced Island, or the Hole in the Wall; when it bears NbW. 4 leagues, you may see, on the continent, a remarkable round hill, bearing NWbN. you are then in 26 fathoms water: From thence you sail along Chapel Island, keeping about 2 miles offing; and whether you leave it on the starboard or larboard, you have no less than 14 or 15 fathoms: From hence you steer NNW. for the bay. When Chapel Island, bears SEbS. the depth will decrease to 14 or 15 fathoms; but if more, haul a little to the Northward, keeping in 11 or 12 fathoms, which is the best channel.

Great
Goeve
Island.

When you are half-way from Chapel Island you may perceive a long island, called the Great Goeve, at the entrance of the harbour, at each end of which is a rocky mountain, and in the middle a sandy bay; to the NE. thereof is a pretty high rock, called the Half-Tide Rock, and though you may pass between the Great Goeve and this rock, it is much safer to leave both on the larboard. You have 16 fathoms a quarter of a league off it. From hence you see the channel open between the Little Goeve and 5 islands which lie to the N. Eastward, keeping mid-channel, in soundings from 14 to 15 fathoms. The breadth between the Little Goeve and the NE. island, which forms the passage, is about half a league.

As soon as you are through this channel steer NWbN. for the SW. coast of Amoy Island, which you sail along, within half a mile, by your soundings, which are very regular. The harbour lies to the N. Westward, and is easily found by the junks, or small Chinese vessels, which lie there at anchor. You may anchor according to the size of your ship. The Chinese pilots generally come on board (even without the bay) as soon as they perceive any ships.

N.B. You must not enter the port before you have obtained permission of the mandarins, especially the Hoppo, who comes to measure the ship and settle the customs, which must be paid according to its dimensions. The trade of Amoy is not easily carried on, by reason of the difficulty they have to find security for the money which you must advance to the merchants. Therefore it behoves strangers to take care of not being made their dupes, by confiding in them.

DIRECTIONS for sailing (u) to CHINA through the Straits of SUNDA, BANCA, &c.

IN the preceding Instructions I observed, that throughout the Indian Seas, to the Northward of the Line, the winds are divided into the Eastern and Western monsoons; I have also shewn that the former commonly reigns from October to March, and the Western the residue of the year: But it is not so in the Southern Hemisphere, and therefore requires a particular description.

Monsoons
in the
Southern
Hemi-
sphere.

In the Eastern ocean, between the Cape of Good Hope and the Land of Concord (w), to the Southward of the 25th parallel of South latitude, the winds blow from the Westward most part of the year; except that in January, February, and March, about the Cape of Good Hope (that is to say, 200 leagues from the East and West coasts) the winds come oftener from the Eastward than from the Westward.

Between

(t) The English Pilot agrees with this in his general Directions for Amoye, page 62; but in his particular directions immediately following he contradicts this, and himself also, saying, "When the island Hole in the Wall bears WbN $\frac{1}{2}$ N you will have the hole open, and when WbN. shut in." I have a drawing of this island bearing W $\frac{1}{2}$ N: with the Hole open, as seen on board the Houghton, 1735.

(u) From the Cape of Good Hope, Mauritius, Donmaschareen, &c.

(w) Our author must here mean the West coast of New Holland, this being on'y a part thereof near the Tropic of Capricorn, and called thus by the Dutch, on account of their being unanimous in their resolutions off this place.

Between 25° (x) and 28° of the same latitude you have variable winds; but beyond, as far as the parallel of 10° or 11° , the winds blow from SE. to E. without any considerable interruption. They are usually called general winds, because they blow thus, not only in the Eastern ocean, but in the other Southern seas; only there, their power extends near as far as the Equator; whereas in the Eastern ocean it seems confined between the parallels of 28° and 10° .

From 10° to the Equinoctial, the winds divide the year into two seasons or different monsoons, blowing about 6 months one way and 6 the other. Although this difference is the same throughout the Indian Ocean; yet the winds have a contrary direction at the same time, and while they have the Eastern monsoon in the Northern hemisphere, the Western blows in the opposite part: The Eastern monsoon, beginning to the Southward of the Equinoctial in April, continues 'till November; then the Western succeeds, and continues 'till April.

The months of April and November, in which the monsoons break up, are subject to variable winds; because they do not change all of a sudden.

All among the Sunda Islands, as far as Timore and Solore, the Westerly winds, which begin in November, bring bad weather with them; in December they blow stronger, and are accompanied with rain; but in January they are in their height, blowing excessive hard, with thunder, lightning and rain; which continue 'till the middle of February, when they begin to die away, and are quite spent at the end of March. The rains and tempests are not every year alike; some years they are both of them more moderate.

In April, with the shifting of the winds, comes fair weather, with only some squalls of short continuance: In May the winds settle in the Eastern board: In June and July they blow stronger, but with a clear and serene sky, which continues 'till the end of September: In October they grow faint and variable, 'till the return of the Western monsoon.

The currents, during each monsoon, set with the winds, excepting in April and November, when they are contrary, and their velocity increases with the winds, as also at the full and change of the moon.

The currents in the Western monsoon are much stronger than those of the Eastern, for which reason the ships which sail from Batavia, from the Islands of Timore, Solore, and the Moluccas, in the Eastern monsoons, find less difficulty than those which return from thence in the Western monsoons: For the same reason, the ships which go from Europe to Batavia, the gulf of Siam, China, &c. go through the Straits of Sunda, easier in May, June, July and August, than those which return in December, January and February.

The winds, during the Eastern monsoon, generally blow from SSE. to East; and from NNW. to West, in the Western monsoon.

Near the Equinoctial line the winds are much more variable, and consequently less to be depended on: For this inconstancy two causes may be assigned; the first, because to the Northward of the Line the monsoons are opposite; the other may arise from the frequent rains near the Line, especially at Borneo, where it rains incessantly eleven months in the year.

At the Moluccas the monsoons are the same as at Java and the adjacent islands, with this difference only, that in the Moluccas they call the Western monsoon the Northern, and the Eastern the Southern; because, during the former, the winds blow more generally from NNW. than from the West, and during the latter from SSE. than East.

The Northern monsoon, at the Moluccas, brings much rain, and the Southern great droughts: is the same at Java, and the other adjacent Islands; but at Borneo there is very little difference.

Having shewn the general rules for the winds and currents in this part of the Southern hemisphere, I come now to determine, in consequence thereof, the course ships must steer, to arrive at their destined ports.

When you take your departure from the Cape of Good Hope, or from the soundings of the Bank, increase your latitude to 37° or 38° , to make advantage of the Westerly winds, which are more constant there than in a lower latitude, and which generally blow from NW. to SW. Though they mostly blow the strongest in the months of June, July and August,

K k

(x) This should rather be 35° .

August, yet it happens, notwithstanding, that in April and May, which in those parts should be looked upon as the end of autumn, you sometimes have violent squalls of wind: These gales are generally foreseen, by black clouds which obscure the horizon, from NW. to W. As soon, therefore, as you perceive these presages, prepare for their reception, because they come on apace, and are sometimes accompanied with whirlwinds. They begin to blow violently from WNW, to W. then they shift with fury to the SW. but when they get to South the wind abates, and it falls calm all of a sudden; but the sea, agitated and raised by the boisterous winds, is not so soon composed; so that this is frequently of worse consequence than the height of the gale. Several mariners have imagined it possible to foretel these sudden calms, by a sensible interruption, or diminution, and by a clearing-up which precedes them; but this opinion is contradicted by experience, and I have often proved that it is not to be depended on; therefore I advise every navigator to avoid, by a skilful precaution, the sad accidents which always follow these events, when they are unexpected, and consequently not provided against.

About 150 leagues to the Eastward of the Cape of Good Hope, you frequently meet with hard gales of wind, accompanied with much thunder, lightening and rain, insomuch that they rarely have a clear sky for two days together, which continues so for 300 leagues further: Several persons, who have frequented these seas, have observed that it extends as far as the meridian, which passes through the Eastern part of the Island Madagascar.

In the S. Eastern ocean, the different declination or variation of the magnetic needle is so regular in sailing from West to East, or from East to West, that you may thereby correct errors in your account of longitude; but then the observation must be taken with a good instrument, and at a time when the ship has not too great a motion.

At the Cape of Good Hope, and to the Southward, about its meridian, the variation observed was about 16° NW. (y) and sailing to the Eastward it increases, 'till you are off the Island Madagascar, to the Southward, where it is $25^{\circ} 30'$ (z); afterwards it decreases as you approach the coast of New-Holland and the islands of Sunda: For the particulars, see the table at the end of this book.

St Paul's
and Am-
sterdam
Islands.

When you are in the latitude of 37° you must keep therein, steering East for about 1100 leagues, or 'till you have made about 70° East longitude from the Cape of Good Hope. It will not be absolutely necessary to see the Island of St Paul or Amsterdam, though the sight thereof will greatly assist you in rectifying your account, and shaping your course afterwards. They are situate 56° to the Eastward of this cape. The former is the Northernmost, and may be plainly seen 12 leagues at sea. It is about 6 or 7 leagues in circumference. Its West end rises very high. The observations of several navigators, compared together, fix its latitude in $37^{\circ} 50'$ South.

About 6 leagues to the Southward of this, lies the Island of St Paul (a), which is smaller than that of Amsterdam: The variation there was observed 18° NW. (b).

If before you have made the longitude prescribed, an extraordinary change of the winds should prevent your keeping your course to the Eastward, it will be proper, in standing to the Northward,

(y) This was about the year 1740. (z) Mr Nicholson, in his Preface to his Rem. and Obs. p. 6, says, it is a received opinion, but a very mistaken one, that the highest variation is off the head of Madagascar; for in fact it is nearest mid-channel (meaning between Madagascar and Africa) or nearest the African shore. I make no doubt but, when Mr Nicholson was there, it might be so; yet that is no reason it might not be off the South end of Madagascar in 1740, or before that time. It is well known the variation has greatly increased since at the Cape of Good Hope, &c. &c. And it seems to me not at all improbable, but that in due time the highest variation will be off that cape; unless like the planet Mars it runs retrograde.

(a) The names of these two islands are here counterchanged, according to the last Paragraph; and it is somewhat difficult to determine which is the right. Indeed the English call the Northernmost island St Paul's, but in the ancient charts the Northernmost is named Amsterdam, and the Southernmost St Paul's.

(b) On board the Defence, in May, 1742, they made 20° the medium of three evening azimuths; at 6 A. M. saw the island St Paul [the Northernmost Island] bearing SW. 7 or 8 leagues. They must have had a very good run in the night-time, for the Augusta, the same year, had two morning azimuths with the Island St Paul in sight, SE. about 10 leagues, and made 19° on a medium: Also in the Severn, the same year, we made $18^{\circ} 48'$ by an evening azimuth, and at 8 P. M. saw St Paul's SE. about 6 leagues.

Northward, not to pass the latitude of 35° ; because under that latitude you frequently have the winds from NE. to E. Several ships for want of observing this, after losing a deal of time in beating to windward, have been obliged to run to the Southward, as far as 40° , to regain the Westerly winds; which makes it evident, that in case of contrary winds you should rather put her head to the Southward than the Northward.

When you have made 70° East longitude from the Cape, you edge away by degrees to the Northward, in such manner as to be able to pass the Tropic of Capricorn in 83° of the same longitude. If, before you sail to the Northward, you can observe the variation, you will be more certain of the position you are in. By examining some latter journals of this navigation, I find the variation, 70° East of the Cape, about or $12^{\circ} 30'$ or 13° N. Westerly (c).

From the Tropic of Capricorn steer NNE. to go 60 leagues to the Westward of the Trial Rocks, which are a cluster of various high rocks above and under water, extending about 15 leagues from East to West, and 5 from North to South: It was discovered by a Dutch ship, 1719: Its existence was afterwards confirmed by a sloop, sent from Batavia to determine the exact situation, which was found in $19^{\circ} 30'$ South, and 80 leagues West of New-Holland. It will be most prudent to pass the latitude thereof in the day-time, because you may fall foul of it in the night, when you reckon yourself a good way off it.

In the latitude of $22^{\circ} 6'$ South, and $74^{\circ} 30'$ East of the Cape of Good Hope, lies Cloate's Island (d). It was discovered by Capt. Nash, who reported that it extended about ten or eleven leagues NEbN. and SWbS. and that it might be seen 10 or 12 leagues at sea.

Having

(c) Capt. Vincent says, this is at least 4° less than it will be found: But it is to be considered that this observation of the variation was made in 1740, and Capt. Vincent's in 1758; besides the uncertainty of determining the longitude by a dead reckoning of so long a run: Therefore I would advise the endeavouring to make the Island St Paul's by all possible means, especially if bound through the straits of Bally, or any other to the Eastward thereof.

(d) The first account we have of this island is from Mr Nash, of the House of Austria, from Ostend for China, in 1719. They saw it first (being very clear weather) about 3 A. M. on which they immediately brought to and sounded, but had no ground with 100 fathoms, though not above 4 miles off shore (some accounts say they had no ground within 2 miles of the island). The day before, and several days after, they observed an incredible quantity of sea-weeds, like those from the Gulf of Florida, and small birds, like lap-wings, both in size and flight. This island cannot be seen far, even in clear weather, and lies NEbN. and SWbS. about 32 miles in length, with terrible breakers from each end, running about 3 miles into the sea: It lies in the latitude of 22° South, $74^{\circ} 30'$ meridian distance, and 92° East longitude from the Cape; variation $6^{\circ} 30'$ N. Westerly. From hence they made $3^{\circ} 6'$ Easting to the Island Bally, and $7^{\circ} 26'$ Westing to Java-head. As they did not find any account of it in their books or charts, they gave it the name of Cloate's Island, in honour of a Flemish baron, probably one of their owners.

The Haeflingfield fell in with it in 1743; they saw it at day-light, bearing from SE $\frac{1}{2}$ S. to EbS. about 6 leagues. They report it lies NE. and SW. 7 or 8 leagues in length, of a moderate height, and pretty level, with a gradual slope to each end, from whence they saw the breakers. By their accounts they make it in latitude $22^{\circ} 7'$ South, meridian distance $26^{\circ} 57'$ and longitude $32^{\circ} 49'$ East from the Island St Paul: Also $67^{\circ} 3'$ meridian distance, and $84^{\circ} 26'$ East longitude from Cape Lagullas; their variation the morning before was 17° N. Westerly. From this island they steered nearly North for 7 days, when they made the land of Java, in the latitude of $8^{\circ} \frac{1}{2}$ and 4° West meridian distance, and in $3\frac{1}{2}$ days more made Java-head, in $7^{\circ} 5'$ meridian distance, and $7^{\circ} 12'$ West longitude from Cloate's Island.

By comparing these accounts together, we may observe the variation does not alter very much hereabouts; and although they differ about 2° of longitude in their reckonings from the Cape (which is not to be wondered at in so long a run, when sometimes they shall differ half as much on board the same ship) yet they agree as near as can be expected in their run from thence to Java-head; so that we may conclude the difference of meridians between this island and Java-head to be about $7^{\circ} 20'$.

And that it does not lie above 3 or 4° at most, from the coast of New-Holland, I humbly submit the following reasons: because the ship Prince of Wales in 1738, the evening before they made this coast (in the latitude of Cloate's Island) observed the variation $5^{\circ} 55'$ N. Westerly, being then at the largest computation about 38 leagues from the land; also because the said ship made but $4^{\circ} \frac{1}{2}$ meridian distance, from hence to the West end of Cambava, lying, according to these charts, much about 12° to the Eastward of Java-head, which agrees nearly with the other two ships runs, for by deducting the $4^{\circ} \frac{1}{2}$ Easting, there remains $7^{\circ} \frac{1}{2}$ Westing to Java-head.

And here it may not be amiss to insert some account of this land from Capt. Pelly's: At first sight it made like small islands, so very low that though it could not be seen off the deck, but only a great smook arising from it, they set it only at 5 or 6 leagues distance. He also sounded, but had no ground with 160 fathoms; nor indeed did he find any sign of soundings as he ran in towards it, the water being not at all discoloured. Standing in ENE. he raised the land, and found it long and level, about the height of the Lizard, and might be seen for 10 leagues, and believed that the land like islands joined to the rest. He made about 34° meridian distance, and $39^{\circ} \frac{1}{2}$ East longitude from the Island St Paul home to this land.

It has been wondered at by some, why I should lay Cloate's island down 4° from the coast of New Holland: Capt. Vincent imagines it does not lie more than 30 leagues therefrom; but if so, I think Capt. Pelly must have seen it: And as the distance has never been truly determined, I thought it prudent to lay it down rather to the Westward, that the navigator might be on his guard in time, though so erroneously far as the French Neptune, which must be more likely to have the contrary effect.

Having passed the Trials you must continue your course NNE $\frac{1}{2}$ E. 'till within sight of Java; so you will make the land about 50 leagues to the Eastward of the Straits of Sunda, and this is distance enough to prevent any error to the Westward. If you follow these directions you generally find the error on the other side: The journals confirm this, that the ships which sail from the Cape of Good Hope to Java, by following nearly this track, have fell in with this land further to the Eastward than they reckoned: But observe, that it is even dangerous sometimes to run too far to the Eastward, on account of the difficulty you have to get out of the bays, formed by the coasts of New Holland, and the islands to the Eastward of Java, where you often meet with frequent calms and currents, which run with rapidity through the channels of these islands.

It is not thus with ships which sail from the Islands of France and Bourbon for the Straits of Sunda; their error, from whatever cause it arises, is generally 70 leagues to the Westward. It will be proper for navigators, who make this voyage, to take care to prevent this difference, by standing so far to the Eastward, as that after passing the Trials you must make good a NEbN. course, 'till within sight of the coast of Java.

In either of these cases, if, after all the precautions necessary, you should fall into the Westward, and that in 7° 30' South latitude you do not see the land, haul upon the wind, to get to the Eastward 'till within sight of it.

Christmas
or Money
Island.

Seventy-seven leagues to the Southward of the West point of Java (e), in 10° 30' South latitude, lies an Island, called Christmas by the English, and Money by the Dutch: Some years since, a ship of that nation run aground thereon, in the night, and was wrecked: Its situation is badly laid down in the charts of both nations. I have determined it by the remarks taken from the journals of several navigators, who have fell in with it, both in going and coming from the Straits of Sunda.

The island is high (f), very woody, and of a very beautiful appearance, affording fresh water, land tortoises and wild hogs. It is said to be safe all about, and that on the North side there is anchoring in 14 or 15 fathoms.

Killing
Islands.

The Killing or Coco Islands were observed, by Capt. Hudson, to lie in the lat. of 11° 50' South, who also made 6° 50' meridian distance, West from Java-head: They are small broken islands and not to be seen above 4 leagues: They are covered all over with trees, and have abundance of breakers about them: They extend about 2 $\frac{1}{2}$ leagues N. and S. but not so much E. and W.

When you fall in with the South coast of Java (g) there is no judging with certainty (for want of good remarks) of your distance from the Straits of Sunda, experience only can enable you to distinguish this. The land near the shore is generally very woody. There are several bays and some islands or rocks, which border the coast, and seem to render it dangerous landing there. The bottom is not proper for anchoring, but very near the shore. Inland it is covered with high mountains, especially the East part, where they are very craggy.

Being in sight of this coast, when you are about 4 or 5 leagues off it, sail along by it, lying generally about EbS. and WbN. except near Wine-cup Point, where it trenches a little more North and South.

Wine-cup
Point.

Wine-cup Point lies in 7° 28' South latitude, and may be known, coming from the Eastward, by the coast's seeming to terminate there; the double land, near the shore, lowers towards this point, which is low and covered with trees: At its extremity there is a little sandy island, close to the water's edge; and the coast in this part is encompassed with breakers a quarter of a league off.

(e) Or Java-Head; though the West Point of Java, and Java-Head, are not the same, but only the author of the Neptune seems to mean Java-Head whenever he mentions the West Point of Java, as is more particularly evident in the next page.

(f) It may be seen 10 leagues in clear weather. There are many birds flying about it.

(g) The draught in my collection is composed from several accurate Dutch ones. The latitude of the principal places upon the coast are laid down, agreeable to the observations of several navigators who have frequented these parts.

From Wine-cup Point the coast lies NbE. for 3 leagues, and after forming a bay to the Eastward it trenches away again to WbN. as far as the entrance of the Straits of Sunda. In this last extent, about 2 leagues off shore, is a little low island covered with trees, called by the Dutch Trouwer's Island, and $3\frac{1}{2}$ leagues WbS. therefrom you meet with Claps's (b) Island, low and woody, like the former. You may anchor hereabouts in 25 or 30 fathoms.

Being past Wine-Cup Point, steer WNW. towards Claps's Island, bearing thus about 20 leagues therefrom. As you near it, you may perceive to the N. Westward, the West point of Java (i), on which there is a mountain of a moderate height, whose West end lowers more suddenly than the other.

To the Eastward of this mountain is another, very much like it in shape and height; between the two is low land, covered with trees. If you come from seaward, and are too far off to perceive this last, the Westernmost mountain appears like an island, and when you raise the Easternmost, the space between them seems to form the entrance of the straits, and then appear the trees and the low land which unites them.

It is about 7 leagues NWbW. from Claps's Island to the West point of Java (i), which seems to terminate very bluff, being only a great rock, separated from the foot of the mountain, with which it appears confounded; coming from the Southward there are some other little rocks above water, about a quarter of a league off shore; and to the S. Eastward thereof a reef upon which the sea breaks.

NNW. 4 leagues from this point is Capuchin or the first point (k) of the Straits (l), and at its extremity a rock, with a tree upon it, which navigators call the Friar. The coast between these two points forms a bight, all along which there are several high rocks, resembling, at a distance, boats under the sail. To the Northward you may see the land of Prince's Island, whose SE. part makes the North coast of a little strait (m), by which you enter that of Sunda. At the SW. point (n) of this island, and 2 leagues NWbN. of the Friar, are several great rocks, called the Carpenters, extending WSW. about a quarter of a league: They are almost close to one another, and steep to, having 60 fathoms close aboard them: All the coast off Prince's Island is equally bold.

One league West (o) of the first point, in a bay, on the coast of Java, you find the little Island Cantaye (p), where several ships put in for water and wood (q). Some charts lay down a bank projecting to the Westward, from the North point of this island; but an experienced navigator (r) affirms, that at half a quarter of a league from this point he found $6\frac{1}{2}$ fathoms: Therefore you need not be too fearful of turning it in this part.

Between the Island Cantaye and the First Point, there lies a great rock or little island.

As the winds, during this monsoon (s), generally blow between SSE. and ESE. to enter this strait you must keep the coast of Java on board, and go as near the Friar as possible: This rock is safe, and there appears no danger within a cable's length of it. When you are near it, and it bears NNE. you may perceive, beyond it, in the same direction, a very high hill,

(b) This is called by the French Isles des Brisans, but is best known to the English by the name of Claps's Island.

(i) Or rather Java-head; for that which the English call the first point is rather the Westernmost part of Java, as is evident by the next paragraph.

(k) All those points (1st, 2d, 3d. and 4th) in the Straits of Sunda, are on the Java shore.

(l) In the draught of the Straits of Sunda, in the English Pilot, the first point of the straits is placed $17'$ more Northerly than it should be: By my observations, and those of several navigators, I make its latitude $6^{\circ} 39'$, instead of which, the English Pilot has it $6^{\circ} 22'$. Beside, if on the same draught you draw a straight line, from the first point to Crackata or Crokatoe Hill, the East part of Prince's Island will then be between them; whereas I have observed, that when these two objects are in one, the Easternmost point of Prince's Island, instead of being shut in, appears open, 2 or 3° . It was necessary to correct so considerable an error, as well as many others, with respect to the bearings and distances, which I shall not relate here, but refer you to the difference between my draught and the other.

(m) By some called Prince's Straits; the Dutch call it Behouden, or the Safe Passage.

(n) Or rather the South Point.

(o) This should be East.

(p) Called by the English Mew Island.

(q) In anchoring at this place, I would caution you against a ledge of sunken rocks, which bear about NbW. one mile from the Watering-place.

(r) M. le Chevalier de la Boissiere.

(s) Between April and November.

hill, like a sugar-loaf, upon the Island Cracata; then the East point of Prince's Island, whereon also is another peak, bears a little more Northerly.

Those who intend to put in at Cantaye Island, as soon as they have passed the Friar, stand to windward, to round the North part of this island, at whose extremity is a great steep rock, but no danger about it, being separated only by a little channel. For conveniency of your boats, wooding and watering, you may anchor mid-way, between this little island and the coast of Java, in 18 fathoms, sandy ground, its point bearing between the North and West (*t*), at the distance of half a league.

This island is not inhabited. The huts or villages are on Java, and that a good way from shore. The refreshments to be had at this place are sea tortoises (*u*), fowls, and coco-nuts, which the inhabitants of Prince's Island bring in their proes on board the ships: These commodities are for the most scarce, and their price exorbitant. Upon this island there is a stone, with the arms of Holland cut thereon; and an inscription, setting forth that they have taken possession of it. You get wood on the island, and water opposite thereto, upon Java: It falls in cascades down the hill, by the sea-side, which is the only water you can get hereabouts.

It is necessary, in this season, to prefer the little strait, between the coast of Java and Prince's Island, to that to the Northward thereof, as it will be exceeding difficult, on account of the winds which blow at this time, to gain the coast of Java, which you should keep on board, not only for the benefit of the winds, but also to get anchoring ground in case of a calm and a contrary current, which is the reason you cannot succeed on the coast of Sumatra.

If some ships, after falling to leeward of the Straits of Sunda, have been lucky enough to re-enter through the great channel, they have employed much time in beating against winds and currents, which is enough to prevent your making choice of it.

Welcome Bay.
Pepper Bay.

When you sail from Cantaye Island, keep along shore, as far as Welcome or the Sound Point, which may be rounded at three quarters of a league distance, and even nearer upon occasion. Within Welcome Bay there are several islands: It extends as far as Pepper Bay, or more properly Point, or the Third in the Strait, which lies 6 leagues NEbE $\frac{1}{4}$ E. of the Second. To the ENE. of this Second Point there is a bank (*w*), upon which an English ship run aground: It will be proper for those who are obliged to turn it, in this part, to pay attention thereto.

Middle or Thwart the Way Island.

When you are to the Northward of Welcome or the Second Point, steer NE. for the Fourth, which lies about 14 leagues therefrom, on this point of the compass. Having sailed about 9 leagues you may perceive, to the NEbN. an island of a moderate height, and very uneven, called by navigators Thwart the Way or the Middle Island, because it is nearly so between the coasts of Sumatra and Java. This island is about 4 miles long, NEbN. and SWbS. At its SE. point a reef projects a mile out.

Serigny Bay.

The Island Cantaye being unable to supply ships that stand in need of proper refreshments, or whose condition wants repairing, those who are so circumstanced will do well to anchor at Serigny, to the N. Eastward of Pepper-Bay, at the foot of several high mountains, which are on that side.

To gain this place, having passed the Second Point of the Strait, shape a course towards the Third, which is more extensive than the other, forming several little bays, and containing about 3 leagues in circumference. Within Pepper-Bay is an island, to the N. Westward of which there are breakers, which render its approach dangerous, as indeed is the whole of the bay.

(*t*) Or rather between the NW. and W. for it cannot be brought to bear North of the ship.

(*u*) Or Turtles.

(*w*) Whereon there is but 9 feet water; in some places it stretches to the ENE. and WSW. 2 cables in length, and one in breadth. When on it, the Northernmost peak on Prince's Island is one with Welcome, or the Second Point, bearing WNW. about 5 miles, or Pepper, or the Third Point, NE $\frac{1}{4}$ E. About 2 cables length NNW. from it there is 19 fathoms.

When you are off Pepper or the Third Point, about a league distant, you may see the little Island Serigny bearing EbN. which from this situation is confounded with the coast of Java, near it: It may, however, be known by several great trees upon it, in some places thick, in others scattered, and less confused. In sailing towards this island you must take care to keep it always on the starboard side, and to anchor about three-quarters of a league NNW. thereof; you will then be about the same distance from the village of Serigny, on the coast of Java, under the declivity of the Second mountain in Pepper Bay. There are many inhabitants, and a market every day. The governor, who resides here, is dependent on the king of Bantam, and all the country round about belongs to that prince. The Dutch only reserve its trade. These people in general, are very selfish, and will buy any kind of merchandize, provided you will sell them at a very low rate, and pay, in exchange, very dear for their commodities. They appear very affable, but you must be on your guard if you would not be cheated by them. You may set up tents, and send your sick ashore upon the island. There is a reef, about a mile to the Northward, which trenches from thence to the shore.

It is about $4\frac{1}{2}$ leagues NbE. from Serigny to the Fourth Point. The land along shore is full of coco-nut-trees, which are the staple of this country. In some places, and especially beyond the village of Negery, there are several breakers, the farthest of which reaches half a quarter of a league from the shore. Having weighed from Serigny, keep about a league off shore. Notwithstanding the irregular soundings, which increase further off, there is good anchoring ground in 20 or at most 30 fathoms: Therefore keep within that depth, in case it should fall calm, or you have not wind enough to stem the current, which generally runs in this season to the S. Westward.

The Fourth Point has nothing remarkable, except that beyond it the coast runs about a league and a half to the S. Eastward, as far as that of Anger or Anjere: The principal village to which navigators have given this name, is situate near the sea-shore, about two miles on this side of the Point: Here you may get buffaloes, hogs, fowls and ducks. Those ships that are short of provisions may put in here: You will be opposite this place when the Middle Island is in one with the high land of Sumatra, about Hog Point; but observe that there is no holding ground between the two points above mentioned, and that a strong current is sufficient to drive you.

NNE. $1\frac{1}{2}$ league from Anjere Point, and at the same distance ESE. of the South part of the Middle Island, lies a little round island, covered with trees, commonly called the Bonnet or Little Cap: This name was given it, to distinguish it from another like it, but larger and higher, called the Hat of Brabant, or the Great Cap, (*) bearing $N\frac{1}{2}W$. 7 miles off the Bonnet.

As from Anjere Point 'till you are past these islands, there is no good anchoring, but in very deep water; it will not be prudent to leave the coast of Java, to go between them, but with a fresh breeze, and not as several ships have done, at the first appearance of wind, which seldom lasts long enough to get to the Northward of St Nicholas (y) Point, or the length of the Northernmost of these islands. Without this precaution, if it should prove calm, you are driven to and fro by the currents, which hereabouts are exceeding rapid, because the channels through which they run are so narrow that they augment their velocity.

To the N. Eastward of the Little Cap, it is said there is a dangerous bank (z), extending along the coast of Java. Therefore, whether you sail from Anjere Point, or any place on this side

(*) Known to the English by the name of the Button, as is the former by that of the Cap.

(y) Or Bantam.

(z) This is called Brouwer's Sand, and is very dangerous, shoaling very suddenly. The Harrison's long-boat was on the this sand, in $\frac{1}{2}$ fathom, with 4 or 5 fathoms within a cast all round about it; the Cap then bore $SW\frac{1}{2}S$. Thwart the Way WbN . the Button $NW\frac{1}{2}N$. the point of an island near the shore, which shut in Bantam Point, NbE. a very little island, close in shore, ENE.

side of it, you must always leave this island (a) to the starboard, and sail between it and the South point of the Middle Island; and then pass the Great Cap on the East side, at what distance you think proper. About a mile off the SW. part of this island (b) there is a rock 14 feet under water, upon which an English ship damaged her keel. Navigators were a long time ignorant of this danger, several having sailed on all sides of this island, without perceiving it (c), whence it is thought not very extensive.

The Two Sisters.

St Nicholas Point (called by some Bantam Point, on account of its nearness to the town of that name) bears E $\frac{1}{2}$ N. 3 leagues from the Great Cap. I think it unnecessary to come near this point, unless upon the appearance of an approaching calm, to secure convenient anchorage. Therefore, after passing the Great Cap, steer NNE. to get sight of the Two Sisters (d), 17 leagues therefrom, on this point of the compass, and situate in 5° South latitude (e). They are two little islands near each other, and of an equal size and height; they may be seen 6 or 7 leagues rather by the height of the trees planted thereon, than that of the land. When they bear NbE. and SbW. they make in one.

The Shabander.

From each end of these islands are two reefs near the water's edge, which extend half a quarter of a league North and South; and though they encompass also the East and West coasts, yet you may near them (especially the last) without danger (f): Nay, it is even improper to keep too great a distance from them, in order to avoid two shoals near them, one of which called the Shabander (from the name of a Dutch ship which narrowly escaped being wrecked here) lies 7 miles WbN $\frac{1}{2}$ N. of the Southernmost island (g). The ship Jupiter, commanded by M. Delfaudrais du Fresne, also struck upon it, returning from China, and had 17 feet of her keel knocked off, which obliged him to go to Batavia to careen.

Most of the manuscript charts place this danger at a greater distance from the Two Sisters than it really is; the same error is found with respect to the East coast of Sumatra, from whence these islands are not above 6 or 7 leagues distant. I have corrected these mistakes in my charts, and to render them more agreeable to the opinion of other navigators, I consulted their remarks, and found that they agreed with mine.

Two leagues and a half EbN. of the Northernmost of the Two Sisters, are two little banks of sand (h), upon which, several persons, who have been near them, affirm they have seen rocks; but as others say nothing of them, it may be presumed that they are covered at high water.

Tollong-Bouang River.

All the coast of Sumatra, from the Straits of Sunda to the length of the Two Sisters, is high land (i); and beyond as far as the Straits of Banca, is low and woody, along which are the mouths of several rivers, the most considerable of which is called Tollong-Bouang: There lies before it a great bank; the verge of which is near 3 leagues off; and to the Northward there is another, projecting still further in some places, and on which are several dry parts: This last is known by a point, which they say is an island, whereon are trees higher than in any other place hereabouts, for which reason it is called Great-Tree Island: From thence to the entrance of the Straits of Banca, the coast forms a bight, and extends NbE. 13 or 14 leagues.

Great Tree Island.

Though by the bearings of this coast you may conclude the Island Lucepara to bear NbE. 34 leagues off the Two Sisters (k); yet the irregularity of the currents, which run into or out of the Straits of Banca, together with the ebbing and flowing of the rivers along the coast of Sumatra

(a) The Great Cap, or Button. (b) The Little Cap. (c) I have also instructions which give an account of one 17 feet water upon it, from whence the Button bears SE $\frac{1}{2}$ S. 2 miles.

also in some French draughts, the Two Brothers.

tions off these islands and Lucepara, made just 2° difference of latitude between them; and says Lucepara's latitude, as laid down in p. 113, is well laid down.

thoms. See page 127.

(f) Capt. Hall says, you may go within $\frac{3}{4}$ of a mile to the Westward of them, and have 10 or 11 fathoms. See the Sandwich's account of it in the Appendix, p. 137, 8.

(g) This shoal I take to be scattered in different parts, and that it extends further than is generally imagined: See the Sandwich's account of it in the Appendix, p. 137, 8.

(h) Here must certainly have been an omission in the original; because in fact it really is so: Therefore I have supplied that deficiency distinguished in the Italic character.

(i) Here must certainly have been an omission in the original; because in fact it really is so: Therefore I have supplied that deficiency distinguished in the Italic character.

(k) Capt. Haggis says, they bear nearest NbE. but that you must steer NNE. and be governed by your soundings, as in the following directions. The distance must be more than 34 leagues. See the preceding Note (e).

(d) These islands are called by the English and Dutch, the Two Sisters.

(e) Or 5° 13' according to Capt. Haggis, who, by two very good observations off these islands and Lucepara, made just 2° difference of latitude between them; and says Lucepara's latitude, as laid down in p. 113, is well laid down.

(f) Capt. Hall says, you may go within $\frac{3}{4}$ of a mile to the Westward of them, and have 10 or 11 fathoms. See the Sandwich's account of it in the Appendix, p. 137, 8.

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(k) Capt. Haggis says, they bear nearest NbE. but that you must steer NNE. and be governed by your soundings, as in the following directions. The distance must be more than 34 leagues. See the preceding Note (e).

prevent your shaping a direct course from one to the other. The best method is to steer by the soundings as follows:

As soon as you have sight of the Two Sisters, steer such a course as to go about three-quarters of a league to the Westward of them in 12 and 13 fathoms (1). From thence steer NNE. in order to keep in 13, 12, and 10 fathoms: If it increases to 15 or 16, this is a proof that you are too far off the coast of Sumatra, to the Eastward; if so, you must borrow more from the North, and even from the West, so as to regain the coast of Sumatra.

On the contrary, if by means of the tides you are drove too near the island of Sumatra, the depth will decrease to 12, 10, and 8 fathoms: As soon as you have this last depth stand to the Eastward, or at least anchor, if the winds will not permit that, in order to avoid the banks bordering the coast of Sumatra; the most dangerous, and that which projects the furthest, is off Great-Tree Island, before mentioned, called by some Turtle Bank.

In the day-time, and clear weather, you may know your distance from this island, as well by sight thereof as by your soundings; but in the night-time, or hazy weather, it is necessary to keep the lead going.

When you are past Great-Tree Island, as you near Lucepara, the depth decreases very regularly, to $7\frac{1}{2}$ fathoms, when you may see it, lying in $3^{\circ} 13'$ South latitude (m): It is small, and the land low, but by means of great trees it may be easily seen 6 leagues at sea: You stand towards this island till it bears North, about $2\frac{1}{2}$ leagues, and then anchor, if the tide or night will not permit you to get within the straits.

From the South point of the island Banca (n) extends a shoal near 5 leagues SSW. If for want of following this direction (o), or if any unforeseen accident should force you on that side; as soon as you perceive it, whether by seeing the land to the Northward, or by diminution of the soundings, you must steer WNW. till you get sight of Lucepara: But these marks are even unnecessary to know when you are to the Eastward thereof, and consequently South of Banca; it is sufficient, in order to be certain of it, that you cannot see the land to the Westward.

Of

(1) See the note (g) in page 112; and the Sandwich's account in the Appendix, page 137.

(m) This latitude is confirmed by Capt. Haggis's observations in the Prince Henry, 1761. By whom also I am informed, that 26 miles to the Southward of Lucepara he had but $4\frac{3}{4}$ F. hard ground; that he was also on it last voyage, in 5 F. at noon, and had a good observation in latitude $3^{\circ} 45'$ S. and made it in the same latitude this voyage; but if so, its distance must be 10 or 11 leagues from Lucepara. After you have run from this bank 10 miles $N\frac{1}{2}E$. you see Lucepara a head.

(n) Most of the old charts vary much in the latitude of the South end of the Island Banca. I took the necessary measures to fix it on my charts with greater exactness: I had an observation within sight of it, in 1737; besides this, I worked a bearing and distance from Lucepara, whereby I formed a tolerable determination, and accordingly placed it in $3^{\circ} 12'$ South latitude; a very different position from that which former hydrographers assign it.

Pieter Goos, in his general chart of the Eastern ocean, which navigators have hitherto looked upon as the most correct, places this part in $3^{\circ} 40'$, which is 28' more to the Southward than it should be; and the English Pilot in $3^{\circ} 30'$, or 18' too far Southward.

Almost all the manuscript charts, which are preferred to the former, are of the contrary opinion; They fix this part in $2^{\circ} 38'$, consequently 34' too far Northerly.

This shews to what dangers the navigator is exposed, by considerable errors in what he thinks he may depend upon: I leave any one to judge how necessary it was to correct them.

I have not confined myself to this correction alone, the old draughts of the Straits of Banca require a greater fill; bearings badly determined, distances ill determined, dangerous omissions, in a word, every thing therein defective, more or less; so that I thought it necessary to draw a new one: Accordingly, in passing through this strait I observed, with the utmost exactness I possibly could, the respective situation of the points, the bearings of each in particular, and the most remarkable places: Also, besides my own observations, I consulted the journals of able navigators, which have furnished me with materials for determining all the parts with greater exactness than they have hitherto been.

With respect to Billiton Island, and the straits between that and the East end of Banca, I have followed the latest draughts drawn by the Dutch. I wished to have seen the memoirs or journals of those who have navigated these parts, to have made them publick; for I should think it hazardous sailing without some such help.

(o) Viz. bringing Lucepara to bear North about $2\frac{1}{2}$ leagues.

Of the Straits of BANCA.

THESE straits extend about 35 leagues from SE. to NW. The Island of Banca whence it derives its name, bounds it on the East side; and part of the coast of Sumatra on the West: This coast is very marshy, and has no other elevation but the trees, the lower parts of which, near the shore, are washed by the sea. You must not approach it too near, on account of a mud bank that borders it, extending half a league out, and even more in some places.

Mt. Parmissang and Monopin.

The Island of Banca is higher, on which are several mountains; but the most conspicuous are those of Parmissang and Monopin.

The Little island Lucepara, before mentioned, lies at the SE. part of these straits, and forms two channels to enter it; the Eastern one is very wide, and seems to make an exceeding fine passage, but it is not frequented. The author of the English Pilot mentions his having conversed with a Dutch commander, particularly acquainted with these parts, who assured him that this was the best passage, the least depth being 8 fathoms. For my part, I think this requires the confirmation of some experience, for all the ships (*p*) to this day prefer the Western channel, between the coasts of Sumatra and Lucepara, which is about 3 leagues broad. Those who have the charge of ships should be particularly careful in this part, on account of its shoalness; several send their boat a-head to sound, which is very prudent, but without this precaution it will be easy to determine the track which you must keep in this passage, with regard to Lucepara and the coast of Sumatra. This is the subject I propose myself in the following Instruction; but first observe, that the tides run very strong and irregular throughout the straits of Banca: The flood sets to the Northward, according to the channel it runs through; the ebb to the Southward in like manner. The continuance of either of them cannot be exactly ascertained; oftentimes the ebb lasts for 16 hours, without interruption, and sometimes less; so that you cannot calculate the beginning or end thereof: However, it sufficeth to attend to the different changes, and to anchor when there is not wind enough to stem a contrary tide.

Now suppose that you set out from the place where I said there was convenient anchorage (*q*) to wait for the return of day, or a favourable tide; from thence steer WNW. 'till you bring Lucepara to bear NNE. then NW. 'till it bears NE. In this track you find $5\frac{1}{2}$ or 6 fathoms soft mud. If your soundings are hard sand, in this passage, it always denotes being nigh the banks which encompass Lucepara; therefore keep more to the Westward, in order to get into mud soundings, which is the proper channel.

The Island Lucepara bearing NE. steer NWbN. 'till it bears ENE. then NNW. and even if it be necessary NbW. so as to give the coast of Sumatra a good birth, which you must then keep at a league, or a league and quarter distance: This will carry you clear of the bank which lies NWbN. of Lucepara, and SE. of the First Point, with only 10 feet water, and on which you may see the breakers at low water (*r*): You must come no nearer the coast of Sumatra if you would not risque the running upon the bank which borders this coast, and whose verge

(*p*) Dutch, as well as those of other nations,

(*q*) Viz. Lucepara bearing North about $2\frac{1}{2}$ leagues, as in p. 113.

(*r*) This is the same shoal that the Cruttenden, Capt. Bowland, was upon in 1765: It extends about NW. and SE. 2 leagues. There is another small one, which lies a little to the Westward of the middle part of this, where the Cruttenden was, and about South from the NW. which is the shoalest part. There is also another small bank, to the Southward of these, on which Capt. Charles Newton, in the Concord, was aground. When Lucepara bore SSE $\frac{1}{2}$ E. and the first point of Sumatra NNW. they had soundings as fast as they could heave the lead, from 10, 7, 4, 3 fathoms, to 10 feet: Therefore you must carefully avoid bringing Lucepara to the Southward of SSE 'till the first point bears NWbW. when you are clear of these banks, deepen your water apace, even though you steer NNE.

runs out half a league, or more in some places. Several ships, by ranging this coast too near, have met with this accident, and have not been able to get off again without a great deal of difficulty.

As you near the First Point (s) of the Straits, the depth increases to 12 fathoms, mud; and beyond that it is greater.

When Lucepara bears East of you, if the weather is clear, you may easily perceive the mountains of Parmissang, on the Island of Banca, which lie NbW. of the First Point of the Straits.

According to the observations of several navigators, the depths in the passage between Lucepara and Sumatra vary at different times, at the same bearings of Lucepara, and at the same distance: Upon examining several journals, I took notice of this inequality, that several ships found 4 fathoms in the same place, according to their estimation, where others had found 6 at another time: This may be occasioned by its being nearer to or further from the time of high water; or by the inundations of rivers, occasioned by frequent and heavy rains; though I am apt to think, that the difference of judgment, in the estimation of the distance from Lucepara, contributes also not a little hereunto; for instance, as on the coast of Sumatra it is very shoal, if instead of 2 leagues WSW. of the former, you are $3\frac{1}{2}$ leagues from it (t), it is not surprising to find there less water: Therefore, when this happens, you must stand towards Lucepara for deeper water.

Remarks
on the in-
equality
of the
depths
between
Lucepara
and Su-
matra.

It is reckoned $8\frac{1}{2}$ leagues NWbN. from the first point of these Straits to the second: But it is to be observed, that the coast between them forms two False Points, so called to distinguish them from the principal ones. This part is also bordered with a mud bank, which projects a mile, so that the coast may be ranged at 2 miles without danger: Where the depths, though unequal, are generally about 15, 18, and 20 fathoms.

Upon the extremity of the Second Point there is a tree, which seems a little separate from it; so that at first sight you would take it for a ship at anchor. The coast beyond forms a great bay, which seems to have escaped the notice of the authors of the former charts, as well as the mud bank, which fills up the whole extent. Several navigators have imagined, that off its extremity was a little bank, between which you might pass. I satisfied myself of this; for being in a boat, I sounded from the Second Point, as far, and further than this pretended bank (u); and observed that this bay was very shoal, so that most of the bank might be seen at low water: In consequence therefore of the bearings I had in sailing along its verge, I have drawn it on my new draught. At the same time I observed that the course from the Second to the Third Point was NW $\frac{1}{4}$ N.

Within the Second Point, about a quarter of a league to the Westward, there is a great tree, encompassed with several others of an equal height; but as this is taller than the rest, it looks like a tree left to grow in the middle of a clipped hedge; it serves as a mark to know the Second Point by, in coming from the Northward, and to avoid the extremity of the bank which lies NbW $\frac{1}{4}$ W. of this tree.

By these remarks it is evident that it is not only dangerous to range the coast of Sumatra, between these two points, but also to sail directly from one to the other. The properest course,

(s) All these points, 1st, 2d, 3d, and 4th, in the Straits of Banca, are on the coast of Sumatra.

(t) The Island Lucepara, and not Sumatra, as some have imagined.

(u) It may not be improper to observe here, that the ship Lynn, in 1733, fell in with a shoal, bearing NEbE. about 2 cables length distance, at which time the Second Point of Sumatra bore WSW. about 7 miles, when they had $\frac{1}{2}$ 7 fathoms; the cast before had no ground with the hand lead.

They took this shoal for the same our author here mentions, though they were rather nearer the Banca than the Sumatra shore; and believe most ships go to the Westward of it, though they imagine they go to the Eastward. In the day-time it is visible enough, and so easily avoided; but it must be dangerous in the night.

Also the master of a Dutch sloop gave an account, on board the London, in these Straits, in 1738, that he had been upon a rock, with 20 and 16 fathoms all round it, which lies East from the Second Point, about mid-channel, but rather nearer Banca; likewise of a sand laid down in the Dutch draughts, between the Third and Fourth Points, near the Banca shore, which he says lies nearer mid-channel.

course, after passing the Second Point, is to stand towards the largest P^o. Nanka, which then bears about NbE. At this bearing its two extremities appear low, and the middle somewhat higher. In this track you have 18 or 20 fathoms, which decreases to 15; as you near the islands keep in this depth. If you are in want of fresh water or wood, you may be conveniently supplied therewith upon the largest island. As there are, between these islands, some dangers near the water's edge, you must anchor without all, and not enter their channels without having first proved them.

When you are off the Northernmost island steer for the Third Point, and leave the coast of Banca, along which are several dangers, and in general very foul ground.

From P^o. Nanka, when the weather is clear, you may see, to the NWbW. Monopin Hill, situate on the West end of the Island Banca: Its height shews it a good way off, and makes it a sure mark to enter the straits, in coming from the Northward, or to go out of them, coming from the Southward.

The Third Point of the Straits, a little higher than the others, is distinguished by a beach of red sand: From off it, you steer EbN. (w) towards the Fourth Point, which lies 20 miles E $\frac{1}{2}$ N. (x) therefrom: You sail therefore a little more Northerly than the bearing of these two points, to avoid the edge of the banks off the river Palimbam (y), which begin immediately after the Fourth Point, about which you often find unequal depths, of 12, 8, and 6 fathoms, which is not to be wondered at, as it deepens again by standing to the Northward.

To the Westward of the Fourth Point is a bank, on which the Stafford was aground, in company with the York and St George; when a small snow, coming by, ran aground also: The bearings on board the Stafford (while aground) were the Third Point (being the Easternmost land in sight) ESE. the Fourth Point SEbE. the Westernmost land of Sumatra, in sight, West, the Westernmost land of Banca NbW. Monopin Hill North, off the Sumatra shore $3\frac{1}{2}$ miles. Sending the boat to sound, found the bank run quite to the shore, and to the Fourth Point. It is soft mud at the edge of this bank, which is hard sand, and so steep that in running across it, in 3 or 4 boats lengths, had from 7 to 3 fathoms. The York, in the morning, could not come to the anchor she let go over night.

The first river's mouth, beyond the Fourth Point, is not that of Palimbam, but you meet with it soon afterwards; as also a little further with a second branch, which divides also into two branches, though this last double branch disembogues itself by one mouth into the Straits. The Dutch have a factory 14 or 15 leagues up it; their principal trade here consists in pepper, calin (z) and rattan (a).

Four leagues NEbN. off the Fourth Point, there is a dangerous reef, formed by several summits of rocks (encompassed with sand) just above water. I examined it, and found 20 fathoms about a ship's length therefrom.

SWbS. 5 or 6 miles from these rocks, there is a bank of 10 fathoms, which any one, not apprised thereof, by sounding on it, in the night, may think himself on the edge of the bank of Sumatra, and by standing off may run upon these rocks.

I shall observe here that the tides run in and out of Palimbam River with great rapidity, especially in the rainy seasons, which cause it to overflow greatly; then the water appears muddy round about, several drifts float along upon the water, and sometimes even 3 or 4 trees surrounded with bushes, resembling floating islands, which the violence of the torrent forces into the sea. In sailing from this river, you must guard against the force of the flood, which drives towards the banks, and the ebb, which drives towards the Banca shore, where the soundings, as I observed, are very dangerous, for besides the different reefs you meet with, there is a considerable bank of gravel, which projects $1\frac{1}{2}$ league SW. off the Western point of this island, near which there is a rock, with only 9 or 10 feet water.

(w) Or rather WbN.

(x) Or rather W $\frac{1}{2}$ N.

(y) Or Palambang.

(z) Tutenague, or Fine Pewter.

(a) A small Cane.

In sailing from the third to the fourth point, when Monopin Hill bears NNW. you must steer NWbW. to range the banks off the river Palimbam; but whether by day or night you must not approach it under 8 fathoms. Continuing this course you discover, to the NW. the False Point of Batacarang, and soon afterwards the True one: These two points, and the low land which lies at the foot of Monopin Hill, 6 leagues to the Eastward, terminates the Straits of Banca, on the NW. side. The principal danger which is found in this channel is the Rock Frederick-Endrick (b), on which a Dutch ship was lost; and it is said that on its shoalest part there is but 12 feet water: The ship Atalanta struck on it in 1729, and was happy enough to get off without hurt. The rock lies W $\frac{1}{2}$ N. (c) of the highest part of Monopin Hill, and about 7 miles from the low land of this part of Banca (d). You may avoid it by keeping rather nearer the coast of Sumatra, in 8 or 9 fathoms (e), whereby you have nothing to fear from the banks which encompass the points of Batacarang: But the increase of that depth, about these points, is a sign of nearness to Frederick-Endrick. You must be careful of this, otherwise you suddenly fall from 16 to 5 and 3 fathoms.

Frederick
Endrick
Rock.

In coming out of the Straits you discover, to the Northward of Monopin, several little islands, some upon the North coast of Banca, others further off. I shall not describe them here for want of memoirs, nor is the knowledge of them any way essential to the subject I proposed myself in this instruction.

From the Straits of BANCA to PULLO-TIMOAN.

HAVING doubled Frederick-Endrick you steer NbE. to pass between the Seven Islands and P^o. Taya: The former lies about 14 leagues on this point of the compass from Monopin Point, in 1^o 7' S. (f). They are of various sizes, and high enough to be plainly seen at 8 leagues distance: The Southernmost appears very small, and a little separate from the rest: The Northernmost is the largest. The coasting along these islands is safe on the West side; but on the opposite side, and between them, I know not what dangers may be met with.

The Se-
ven
Islands.

P^o. Taya, 25 miles NW. of the Northernmost of the Seven islands, is high, and may be easily seen, in fine weather, 10 or 12 leagues: On the North side thereof are two great rocks. Most altitudes taken on the parallel of this island fix it in 0^o 48' S.

P^o. Taya.

In sailing from the Straits of Banca, towards these islands, the depth increases from 7 $\frac{1}{2}$ to 12, 15, and 17 fathoms. In the night-time, or in cloudy weather, you may perceive whether the currents set to the Westward by the soundings decreasing, and having sand mixed with mud; whereas on the Banca side they increase and are mud only.

Beyond P^o. Taya there are islands large, middling, and small, and all in general exceeding high: The most considerable is that of Lingen, which shews itself above the rest, by a mountain, whose top terminates in two pointed spires, like two steeples near each other: On the East

P^o. Lina-
gaa.

(b) Or Hendrick.

(c) This should be WNW. according to the Caesar's Remark, in 1728, and Mr Wm. Smith's, in 1758; else it spreads wider, with great overfalls between, than has been imagined, which I am rather inclined to believe. Or perhaps different spiral rocks.

(d) This direction is taken from the journal of the Sieur Aignanla Mothe, chief pilot of the ship Condé, who founded this danger, and the parts about it.

(e) Or from the first cast $\frac{1}{2}$ 6 F. steer no further Westerly than SbW. and so long as you keep under 10 F. there is no danger with that course.

(f) The chart of the English Pilot, and several other manuscripts, make this distance 5 leagues less than it should be. Most navigators agree in this error, which I have corrected; so that the distance from the Seven Islands to P^o. Taya, in which this same chart is taken, by placing this last 13 leagues from the Seven Islands, should be but 8, according to their bearings and difference of latitude. I pass over in silence several other errors in the bearings and distances, which it was proper to correct.

East part of this island is another mountain joined to the former by low land, which at a distance looks like an island: This last is not so high, nor rugged at the top. To the Eastward of this lies a little island, of a middling height, covered with trees, about $1\frac{1}{2}$ league distance from P°. Lingen Point.

Some navigators say, that between P°. Taya and the South point of P°. Lingen, lie several islands, which are not marked upon the charts. I did not perceive any, and as it is requisite to have better authority than hear-say, I did not think proper to insert them in my charts (g).

Dom-
nies
Islands.

To the Northward of the East point of P°. Lingen, and exactly under the Line, are several little low islands, surrounded with rocks, called the Dominies.

When you are about 5 leagues East of P°. Taya, steer NEbN. till in the latitude of 30° N. in order to go without the two banks, which the English Pilot, and Dutch charts, lay down hereabouts: The Easternmost lies NEbN. of the East point of P°. Lingen. I never could learn any thing certain in regard to these banks, or their situation, but I think it prudent to beware of them.

The soundings in this track, between P°. Taya and the Equinoctial line, are 18 or 20 fathoms, fine grey sand, and beyond it 24, 25, and 27, the same ground.

Having passed the banks above mentioned, you must steer NbW. to get sight of P°. Auore.

You generally experience, in this track, some help to the Northward and Westward, and consequently you make P°. Auore sooner than you expected. Some navigators attribute these events to the currents, which run into the Straits of Malacca; however likely this opinion may seem, to me it doth not appear at all probable: In fact, as almost all ships fix the same difference, it should follow that the currents continually set into these straits; but the experience of both ebb and flood absolutely prove the contrary. This is jumping to a conclusion from the effect, without investigating the cause: However, if you should happen to be set to the Eastward, towards the Anambas, you may be apprized thereof by your soundings, which will be 45 and 50 fathoms mud; whereas in the fair-way to P°. Auore you have from 28 to 35, fine grey sand, sometimes a little coarser, mixed with small black stones, and very little mud.

From P°. Auore you sail towards P°. Timoan, and from thence take your departure for P°. Condore. I have treated of these islands in page 78, to which I refer, as well as to the directions I have given in the 83d, and following pages.

Most charts lay down the Islands of the Holy Ghost, but as none of the journals or memoirs I have seen make any mention of them, I can say nothing certain about them.

Some of these islands of the Holy Ghost have, of late years, been seen by some of our ships, particularly the Osterly, Capt. Frederick Vincent, in the year 1758, and the Albion, Capt. William Larkins, 1762. Woody Island, a small island so named on account of its being covered with trees, lies in the latitude of $1^{\circ}40'$ N. and $46'$ E. from P°. Taya. Saddle Island, making in two hillocks, which bear about E. and W. of one another, was seen by both ships; and lies in about $2^{\circ}20'$ N. and about $28'$ E. There is a remarkable white rock, bearing about SbW. 5 leagues from Saddle Island, on the W. side whereof the Osterly passed, within a mile of it, and had 28 F. fine grey sand. The Albion went between them, rather nearer Saddle Island, and had 38 F. Mr Powell, chief mate of the Osterly, mentions 5 small islands or rocks to the N. Eastward of Saddle Island 3 or 4 leagues; but Capt. Vincent takes no notice of them; nor Capt. Larkins, who passed so near Saddle Island that he must have seen them, had they existed. The Southernmost of the Anambas were seen at the same time, and P°. Domar soon after.

DIREC

(g) However, there is a dangerous bank, on which the ship Ilchester was aground, 1754; but by backing all her sails, instantaneously, she providentially got off again. They observed at noon, in latitude $0^{\circ}21'$ S. and steered per log. WbS. about 8 leagues, and struck in a quarter less, 3 fathoms mud; at the same time they saw two hummocks, bearing NNW. Westerly. The east before they struck was 24 fathom.

DIRECTIONS for sailing from PULLO-CONDORE to CHINA, to the Eastward of the PARACELS.

THIS passage certainly deserves to be preferred by navigators to that between the coast of Cochinchina and the Paracels; for the squalls and calms which happen frequently in the latter, the number of dangers with which this coast is surrounded, and the little succour which the ports thereof afford, render the voyage longer, more painful and dangerous, and without any one advantage: On the contrary, in the Eastern passage, the monsoons are constant and fresh, the passage shorter, and the dangers, which are not many, may be easily avoided; wherefore our modern navigators chuse this, and have almost wholly relinquished the other.

Thus much premised, I shall proceed to describe the courses as proposed.

After you have sight of P^o. Condore, you continue your course to pass to the Southward (b) thereof, and after you are past it, shape your course for P^o. Sapata, or the Shoe Island, bearing NEbE½E. (i) 25 leagues. NNW. 4 leagues from this is another little round island (k), and between them both a rock above water, which resembles a little pyramid (l).

Two miles to the S. Eastward of P^o. Sapata it is said there is a shoal. M. le Chevalier de la Boissiere (m), commander of the ship Neptune, in 1733, mentions in his journal that he saw it break, about half a league from him, and that it seemed to break for about a cable's length: That the ship Mars, in 1730, being becalmed, about a league to the S. Eastward of P^o. Sapata, perceived the rocks under the ship's bottom, in 20 fathoms: He was then very likely on the extremity of the reef. Such well-grounded authorities for the certainty of this danger, are sufficient to induce navigators to beware of it (n), and not approach P^o. Sapata nearer than 2 leagues; besides, it is enough to see it, without coming near it.

N. B. West 4 leagues from the Catwicks is a rock lately discovered.

Having

(b) This would have been better expressed to have said, so as to pass to the Eastward thereof; as ships usually do: Nevertheless, on occasion, they may pass safely to the Westward. There is said to be a small rock, even with the water's edge, EbN. 15 leagues from P^o. Condore, discovered by Capt. Boone; I have not heard of its being seen by any other person, yet 'tis prudent to keep a good look-out.

(i) Capt. Vincent thinks it should be rather 55 leagues, being 50 by the charts. I take this to have been a mistake of the French printers, by counter-changing the figures, and that it should have been 52 leagues. Mr. Nichelson makes it bearing and distance: NE½N. 48 leagues. See his Rem. page 81.

(k) Called the Great Catwick.

(l) Called the Little Catwick.

(m) This skilful navigator deserves here a particular encomium, for the care he took in making observations, as useful as judicious. It would be a good thing if others would be as exact, but most navigators frequently neglect what is most essential; and, among the great number of journals, there is scarcely any thing worthy of attention.

(n) Since my publishing the first edition of this work, I have been favoured with the following account, signed Rondstein: That the Gottenberg, a Swedish ship, coming from Batavia, and bound for China, in July, 1744, made P^o. Sapata, which at 8 A. M. bore NW½W. by compass, distance by estimation 4 or 5 English miles. It being only light airs and calm, hoisted out the pinnace, and rowed towards the middle of the island, and heaving the lead had 120, 70, 60, 30, 20, 14, 10, 7 and 3 F. grey sand and red coral with stones; hove the lead again, and had immediately 13 to 14 feet, the middle of the island then bearing very near NWbW. dist. 3 or 4 miles; rowed away again to the land, and found from 14 feet to 6 F. and so deepened away to 12 F. Then we had a pretty breeze Southerly, and the signal was made for the pinnace to come on board, so that we had no time to heave the lead any more; otherwise should have taken the cross bearings of P^o. Sapata, and the two small islands. — This may possibly be the same shoal mentioned, or, as the soundings are so irregular, it is not improbable but that there may also be another nearer the island: For these, I. Mainville's caution of coming no nearer P^o. Sapata than 2 leagues may be pretty sufficient; but not in general, for he seems to be unacquainted with the shoal, or shoals, mentioned by Capts. Hill, Misenor and Webb, bearing ESE. from P^o. Sapata; the former sets them about 7 miles distance, but Capt. Webb thinks they lie better than 3 leagues off, and he had as good an opportunity for determining the distance, if not better than the others, as he was between the island and the shoal, the former bearing WNW. about 2 miles, when they saw the shoal only from the mast-head, according to the following extract from his journal, &c. "First of September, 1751, at half an hour past 11 A. M. P^o. Sapata bore North, distance about 1½ mile; at noon P^o. Sapata bore WNW. 2 miles; the Small and Great

English
Bank or
Maccles-
field Shoal.

The Vigia
of 11°.

The Spec-
tacles, or
St Antho-
ny's Gir-
dle.

Having passed these islands, about 2, or rather 4 leagues to the Eastward, the course is NE½N. to get soundings on the English Bank, or Macclesfield Shoal (o); situate between the parallel of 15° 40', and that of 16° N. thereby you leave to the starboard the Rock of Andrade, the Vigia of 11°, and a rocky bank, which lies in 12° 24' N. and 42 leagues NE½E. from the latter.

The Vigia of 11° N. is a sandy island, near the surface of the water, which has a reef at each end. A navigator (p), returned from Manilla, saw it, as well as the rocky bank above mentioned, upon which he founded, and had 9 fathoms.

NE½N. from P° Sapata, in 12° 45' N. is a bank of 20 fathoms. Several ships going to China, have actually seen the colour of the water changed hereabouts; and their journals, which make mention thereof, convince me of its existence. Though this bank is not dangerous, yet to avoid it, in sailing from P° Sapata, steer NE. till you are in the same latitude, and then NEbN. for the English Bank.

This is a rocky bank under water, discovered in 1701, by an English ship, called the Macclesfield. Its extent from North to South, as above mentioned, is better known than that from East to West. On it are various depths, those of 50, 40, 35, and 20 F. are the most common; but on the NE. part it is much shoaler, where several ships have found 9 F. and immediately after sailing to the East or West the depth exceeded 60 F. by which you may judge the steepness of its verge (o).

The Spectacles, or St Anthony's Girdle, are several rocky pyramids, between which it is exceeding dangerous to pass; some rise to the surface of the water, and many others have 60 or 80 fathoms quite close on board them.

It is very useful to get soundings on the English Bank, to correct the reckoning, that from thence you may, with more certainty, shape your course towards such part of the coast of China as you intend.

"Great Catwick in one, NWbW. There seems to be a reef running from the Little Catwick to P° Sapata, and a great rippling from the said Catwick towards the NEbE, about 6 miles; We also saw the breakers from the mast-head, formerly seen in the Compton, Capt. Misenor; they bear about ESE. more than 3 leagues from P° Sapata." Therefore as there is no occasion, so I cannot think it prudent to go nearer P° Sapata than 4 leagues, not even in clear weather; for I do not find the Swede saw any sign of the shoal from on board the ship, though they were but a mile off it: And this may account for Capt. Webb's not taking any notice of it, though also so near the spot; as likewise for the French ship Mars, which, by their seeing the rocks under the ship, in 20 F. must be even nearer than the Swede, so that this shoal is really very dangerous. Let this serve as a general caution to all navigators, how they too confidently assert the non-existence of shoals, because they perhaps have passed near the spot where they are said to lie: None can have more reason for such an assertion than the above three ships; and yet the Swede's account is so very particular, and in a great measure confirmed by that of the Mars, that its existence cannot reasonably be disputed. This is also still further confirmed by Capt. Charles Haggis, who saw them in the Prince Henry, in 1758, and again next voyage, in 1761, and is confident its distance is not above 5 miles à P° Sapata; and is one with Sapata bearing SEbE½E.

Whether this be the same here mentioned to have been seen by M. le Chevalier de la Boffiere, I must question; because it is said he saw it break about half a league from him; and as there is no mention made here of its bearings and distance from P° Sapata, which would have cleared up the point, and doubtless might have been collected from the chevalier's journal: But I rather take it for the other, seen by Capt. Hill, &c. bearing ESE. 3 leagues for P° Sapata; for that has been seen to break, but this probably only at low water, or neap tides; because when Capt. Webb was so very near it, he saw no symptom of it, and at the same time saw the other break from the mast-head. Now it may well be supposed that seen by Capt. Hill, &c. breaks only at or near low water, since it is so seldom seen, though so much in the fair-way, that many have doubted its existence; and if so, it is most likely that it was about low water when Capt. Webb saw it, and yet saw not the least sign of the inner one, though so much nearer it than the other; which perhaps never would have been known, but by sending the boat in to sound, unless by the loss of some ship, as was the case by two shoals even on our own coast, the one near Beachy-head, on which Sir George Walton struck; the other in Plymouth-sound, which was not known 'till one of the capital ships struck upon it in the year 1705. Capt. Haggis indeed saw it break plainly, at the distance of about 1½ mile, in 1758; but next voyage, though considerably nearer, could only distinguish it by the sea rising a little more confusedly in that part, and many birds hovering over it; by which it appears there is plenty of fish.

(o) In September, 1750, the York, Capt. Ward, anchored on this bank, in 10 F. rocks and clay, and sent his yaul to sound all round about, which found no less than 10 F. When he run off to the Northward, had 11, 12, 15, 19, and 25, and then no ground with 50 F. of line, and was at that time in latitude, by account, 16° 3' N. He made 40½ mer. dist. between P° Sapata to this bank, where he anchored; but it is to be observed, he imagines he had a strong Easterly current; he afterwards made 14' Easting to the Easternmost of the Leehmo Islands. In the Prince Henry, 1758, being in about the same latitude, and 4° 16' E. long. à Sapata, they had 40 F. coral rock: From thence steered NbW. and soon after had 15, 14, 12 ¾, 11, 13 F. all coral rock, as far as they could heave the lead; then no ground, 17, 30, 45, 50 F. having run in this time about 4 miles.

(p) M. Cotterel, an officer of the India ships, communicated to me an extract from the journal of this navigator. The Montague and Cambridge made it on a NEbE. course from P° Sapata, in 11° 5' N. by a good observation.

The necessity of falling to windward of the consigned port, obliges ships, in this monsoon, to make the land to the Westward; therefore those who are bound to Macao, must get sight of the Island Sanciam (p) or P^o. Outchou (q), whose South point is situate in $21^{\circ} 30'$ North. Therefore, from the English Bank, steer NNW $\frac{1}{2}$ W. by this means you may be sure of seeing them, or even the Mandarin's Cap, which is still more Westerly (r).

If the currents set you to the Eastward, within sight of the Ladroon and Lema (s) Islands, you may know them from those on the West side, by means of their latitude; because the South point of the Great Ladroon is $23'$ more Northerly than that of the Island Sanciam; a difference of this kind ought not to escape an observer: Besides this, the size of the Western islands, each of which, in particular, appears much longer than those to the Eastward, and their different bearings, are more certain signs than the quality of the soundings, which sufficeth, according to several navigators; but to this, experience hath taught me not to trust.

As it is a very material point to be certain whether you are to the Eastward or Westward of the Grand Ladroon, I shall subjoin what other rules and marks for this purpose have come into my hands: When you are in $19^{\circ} 30'$ N. found, and if you have above 55 fathoms, haul to the Westward (or above 50 fathoms in 20°) so as not to have above 30 fathoms in 21° , then keep in that depth, which will bring you in sight of the Grand Ladroon. If you have more than 30 fathoms in 21° , you may reckon yourself 3 leagues to the Eastward for every 2 fathoms greater depth. In the latitude of 21° , and 30 leagues to the Eastward of the Grand Ladroon, had 50 fathoms, coarse sand and black specks.

In sight of land, to the Westward of the Grand Ladroon, you generally have muddy ground. The Grand Ladroon is very high, and in fair weather may be seen, from the mast-head, 14 leagues,

(p) St John's.

(q) P^o. Baby.

(r) By comparing former charts with mine, in this part of the coast of China, may be seen a considerable difference, which consists not only in a much more correct description, but in the reciprocal situation of the principal places.

According to the astronomical observations made at P^o. Condore and Canton, I have adjusted their situation in my charts: The difference between their meridians is $5^{\circ} 43'$ which agrees much better with the ship's run, than any other heretofore.

Peter Goos, whom I looked upon to be the most exact, makes this difference $6^{\circ} 15'$ that is to say, $1^{\circ} 27'$ or rather $32'$ more than it should be: The English Pilot, and most of the manuscript charts in use, are still more defective, since they place Canton $7^{\circ} 30'$ East of P^o. Condore, that is to say $1^{\circ} 47'$ more to the Eastward than it really is. Navigators, not insensible of these errors, have most of them had recourse to the currents, to give a reason for the apparent deviation of their course; but I have made it appear in another place, that this pretence was ill grounded, and not to be any longer admitted, with respect to these seas, which seem to authorize them, especially at this season.

The situation which Peter Goos and the English Pilot give to Manilla, the capital of the Philippine Islands, is still less exact, whether considered with reference to P^o. Condore or Canton; and its distance from one to the other is no better determined. I have examined several journals of this navigation, and worked their courses from P^o. Condore to Goat Island, just without the Bay of Manilla, and the same from thence to P^o. Condore, and by the small difference I found between them, I imagined we might infer the medium pretty exact, and thereby determine the difference of meridians between Manilla and P^o. Condore, to be 13° ; whence I concluded this capital to be $7^{\circ} 17'$ to the Eastward of Canton. See the Preface, p. xiv. and xv.

According to Peter Goos, the difference of longitude between Manilla and Canton is $5^{\circ} 15'$, that is $2^{\circ} 2'$ less than it really is: But then indeed the error is 20 leagues, or rather $32'$ as above, less between P^o. Condore and the Manilla, because this author, as above mentioned, places Canton so much more to the Eastward of this island than it should be.

The English Pilot deviates still more from the truth, in that his chart makes the meridians of Canton and Manilla differ but 80 leagues, instead of 145 and two-thirds, so that the latter should be 75° two-thirds, or rather 65 leagues and two-thirds, more Easterly, which it is not: The error then is 50 or rather 30 leagues in regard to P^o. Condore: For as Canton is laid down $1^{\circ} 47'$ too far to the Eastward of Condore, and Manilla $3^{\circ} 17'$ or 65 two-thirds leagues less Easterly than it should be, with respect to Canton, as above; therefore subtracting the former from the latter, the difference will remain $1^{\circ} 30'$ or 30 leagues: Or thus, the difference of meridians between Canton and P^o. Condore is $5^{\circ} 43'$ and between Canton and Manilla $7^{\circ} 17'$ therefore Manilla is 13° East of P^o. Condore; but the English Pilot makes $7^{\circ} 30'$ between Canton and P^o. Condore, and 80 leagues or 4° between Canton and Manilla, making $11^{\circ} 30'$ between Manilla and P^o. Condore. Now by subtracting $11^{\circ} 30'$ from 13° there remains $1^{\circ} 30'$ or 30 leagues as above.

Throughout the whole there seems to be prodigious blunders, which I leave our author to account for in his next edition: I have corrected them, to the best of my judgement, in the Italic interworded.

Now what reason can be given in vindication of former charts? If you consider that the voyages from P^o. Condore to Manilla and China are made in the same monsoon, the currents cannot reasonably be alledged, because then it must be supposed that in the same seas, while one current sets to the Eastward the ships bound to China, there is another which sets to the Westward those bound to the Philippines.

(s) Or Leehmo.

14 leagues, or in the latitude of $21^{\circ} 20'$ N. and no other land in sight; if it bears North you have then about 35 fathoms. If you have no soundings till you get into the latitude of $20^{\circ} 40'$ N. and then have from 45 to 50 fathoms, fine grey sand and oaze, the Grand Ladroon will certainly lie between the North and NbW. Others say, South from the Grand Ladroon, in 40 or 45 fathoms, you will have black coarse sand, and sometimes large stones, and nearer it white coarse sand and shells: But if you have no soundings, till you get to the Northward of $20^{\circ} 40'$, you will find more than 50 fathoms, by which you may depend on being to the Eastward of the Grand Ladroon: In relation to soundings, thus much may be said with certainty: Being to the Westward of the Grand Ladroon, in the latitude of $20^{\circ} 20'$, or $20^{\circ} 30'$ N. your first soundings will be from 90 to 70 fathoms dark sand and oaze; then by standing to the Northward you will have 50, 40, 30, and 20 fathoms, sand, coarse sand and shells, sand and stones, and fine grey sand: As soon as you get into 18 fathoms you will have soft mud, which continues to the Bogue Tigris (the soil, I mean, not the water.) My reason for being so particular, is because the rule of soft ground to the Westward, and hard ground to the Eastward, if followed, may easily lead one astray.

Another guide is the depth of water; the islands to the Eastward being much steeper than those to the Westward: Again, all the islands to the Eastward are high and uneven, having 16 or 17 fathoms water among them, whereas those to the Westward are moderately even, very high, large and long, and make more like a coast than islands, and have but 7 or 8 fathoms. To be certain (says one) take this said to be an infallible rule: When in the latitude of $21^{\circ} 30'$ N. stand about 7 leagues to the Northward, at which distance, if you shoal your water but 1 or 2 fathoms, you are then undoubtedly to the Eastward, but if 7 or 8 fathoms, to the Westward.

However, when or wheresoever you fall in with them, push in boldly for them; and if you do not then know where you are, come to an anchor (for there is always good anchoring ground) and get a pilot: But if you are fearful, and lie off, the currents will drive you about, and other ill consequences may follow.

When therefore you are convinced, by one of the methods above mentioned, that you have fallen to the Eastward of the great channel of Macao, coast these islands to the Southward, as also the Grand Ladroon, which being doubled you steer NW. to approach the the Island Mirou, which has a white patch on the land in shape of a mizzen, which makes it easily known: I have mentioned it in page 101, and there given the necessary directions to gain the Road of Macao, to which I refer you, to avoid a needless repetition.

Though, according to several reports, the different channels which are formed by the Ladroon and Lema Islands, are deeper, and not so full of dangers as the passages between the Western islands, yet it is not prudent to venture therein, without a coasting pilot (t). For want of this, the safest way will be to sail to the Southward of them, even though the wind is contrary, since you may fetch the Road of Macao, by favour of the tides which ebb and flow.

Whether you fall to the Eastward or Westward of these islands, the soundings will always shew their nearness, and you generally meet with them 16 or 18 leagues from land.

If by any unforeseen accident your voyage is prolonged (u), or by a too late departure, you are hindered from making P°. Condore till the end the Westerly monsoon, the course I have

(t) Which you will have come off to you on firing of guns: Several of our ships have by this means passed between them, without either danger or difficulty.

(u) This happened in 1740, to the ship Jason, commanded by M. Dordelin, who having fallen to the leeward of the Straits of Sunda, and being in sight of Trieste Island, 38 leagues to the N. Westward of Engana, to avoid losing time to no purpose in beating to windward, he sailed along the islands off the coast of Sumatra, and went into the Eastern seas, through the Straits of Malacca; delayed considerably by calms and contrary winds, he did not make P°. Condore till the 12th of September, when to render his passage the more certain, he resolved to follow the course above described. The third of October he got sight of the Island Luconia, and arrived on the coast of China, about Groaning Bay, the 9th of the same month; and from thence

above described will not be safe. The changeable winds and frequent calms, which usually precede the changes of the seasons, make it necessary to take the following precautions.

From within sight of P°. Condore, endeavour to make P°. Sapata, as aforesaid, then steer NE. as far as 13° of latitude, to avoid the rocks spoken of in the same article.

From this situation steer NEbE. to get sight of the North part of the Island Luconia. Upon approaching this island you should keep a good look-out for the dangerous banks of rocks, which lie along the West coast, lest by an error in your account of longitude you fall in with them, when you reckon yourself at a distance from them (*). You may perceive the breakers in the day-time, but in cloudy weather, or in the night, you run in danger of being lost: You may prevent this accident, by getting to the Northward in time, at least into 17°, in order to get beyond their latitude, and then sail towards the coast, as far as within sight of Cape Bajadore.

You must not expect to find soundings here as in most other places, whereby to know the nearness of the coast: Its steepness prevents your getting soundings, even at a small distance from the shore; but the land is high, and may easily be seen 12 leagues at sea.

From within sight of Cape Bajadore you shape your course towards the coast of China; and herein you must be very careful to avoid the dangerous bank of Plata, on which many ships have been lost.

Bank of Plata or the Praters.

This bank is situate 78 leagues ENE. of Cape Bajadore, extending 8 leagues from North to South, between the latitude of 20° 45' and 20° 17' North, and 10 or 11 leagues from East to West. This space is filled with rocks above and under water: On the NW. side lies a little island, in form of a crescent, near which you may anchor in 8 fathoms, white sand mixed with rocks. To the N. Eastward is a bank of sand near the water's edge; and in different places are to be seen anchors, left by ships which have been there.

Capt. Dennis saw the Praters, from NW. to ENE. and a small island within the breakers NNW. 3 leagues; he sounded, but no ground with 70 fathom. They made the latitude of the Praters 20° 5' North, and meridian distance 5° 55' East from P°. Sapata: He afterwards made 1° 46' West to the Lema Islands, which he made in latitude 21° 58' North, and meridian distance 1° 9' East from P°. Sapata.

The bank of Plata is so much the more dangerous, as you do not perceive the island in coming from the Southward, or from the Eastward; you only distinguish the rocks 2 or 3 leagues off, so that to avoid them, you must (in sailing from Cape Bajadore) steer NWbN. till in the latitude of 21° 30' North; then steer WNW. to make the coast of China, which you may range till within sight of the White Rock, situate in 22° 6' North latitude, and 15 leagues from the continent. This rock is easily known by its whiteness; it is safe, and steep on all sides: You may pass between that and the coast of China; the least depth is 15 fathoms. From thence, steering WbS. you presently see (on the same point) the Islands of Lema, between which there is a very fine channel to go to Macao; those who have sailed through it say that the dangers are visible, and that you do not find less than 8 fathoms, mud. To the Northward there is a hill called the Peak of Lantao. Those who do not chuse this may coast the islands on the South side, as far as the Great Ladroon, and conform to the preceding instructions to reach Macao, page 101.

Pedro Blanco or the White Rock.

Peak of Lantao.

From

Lintin, or Linting, by sailing between the islands of Lema. Thus this voyage was rendered successful by the prudence and ability of this navigator.

I have read several remarks made by the Sieur Philip Dauge, chief mate of this ship, which have served me to correct many actual errors of the old charts. He also took care, at my request, to verify the situation of several parts of the Straits of Sunda and Banca, of which I had not been able to satisfy myself. All his works have assured me that there are few officers more exact than he in his remarks, more careful to perfect navigation.

(*) Capt. d'Auvergne, in the Scarborough, struck on one of these, in 1748. See his account thereof in the Appendix, p 140—142.

From CHINA to the INDIES, or EUROPE

THE departure of ships from the coast of China should be between the middle of November and the middle of February; for although your business would permit you to sail at the beginning of the Eastern monsoon, the winds are still so changeable that you had better wait 'till they are a little settled.

From Macao you steer a course to go between the little Island Potrie or Middle Island, and those on the West side; and observe to keep rather nearer the latter, on account of the dangers which surround the former: After having passed it, you may steer S.E. to get soundings on the English Bank.

I know not why several navigators have taken great care to confirm their reckonings by this means, going to China, and have neglected to do it coming back: If you consider the consequence of it, you will find they are in the wrong; for in the first case, an error can but at most occasion a small delay; but in the other, they may meet with many dangers, of which there is nothing to shew the approaches, and where a little difference may cause the loss of the ship. Thus you see the former is the least material, and the precaution absolutely necessary.

Having struck ground on the English Bank, steer to the SWbS. 'till in the parallel of $12^{\circ} 30'$, then SW. to make P°. Sapata (y).

If in its latitude you see nothing of it, you must make sure of P°. Condore (z) the better to shape a course from thence to P°. Timoan.

I have observed, in page 83, that the bearing of P°. Condore from P°. Timoan was N. $20^{\circ} 30' E.$ (a). It will not be difficult therefore to shape a course from the former to the latter, according to its bearings and distances from you. As for the direction and strength of the currents, in this season, the rules are not more certain than during the Western monsoon; several ships have been driven towards the Anambas, others towards the Malaya coast: The signs of being near the latter, or rather the former, are mud soundings, and a greater depth than towards the opposite coast; so that when you think yourself about the latitude of these islands, if you have 45 or 50 fathoms, bear to the Westward, in order to gain the coast of Malaya; the decrease of whose depth is a surer sign of your approach thereto than the quality of the soundings (b).

The height of P°. Timoan makes it easily seen at a great distance, unless obscured by cloudy weather, as sometimes happens at this season. Having made it, you shape your course according to the distance you are from it, to go 5 or 6 leagues to the Eastward of P°. Auore, or nearer

(y) In steering for P°. Sapata, be careful of giving it a good birth, for fear of being set within it by the currents; and on the other hand be cautious of keeping too far to the Eastward, because of the shoal which lies about 40 leagues to the Eastward of P°. Sapata.

(z) And for your assistance herein, you have soundings all the way between these two islands; therefore when you are past the latitude of P°. Sapata, sound, and if you have no ground with 50 fathoms, you may conclude you are to the Eastward, so that you must haul to the Westward, 'till you get soundings, then steer WSW. and WbS. for P°. Condore, and you will diminish your soundings gradually; but in case of thick weather, &c. that you cannot see the island, keep your lead going every half hour, and if in the latitude thereof you have 20 fathoms, grey sand and shells, you are not above 5 or 6 leagues from the island; but if you have from 25 to 30 fathoms you may be assured you are at least 20 leagues to the Eastward.

(a) Mr Nicholson makes it but N $19^{\circ} E.$ and distance 122 leagues. See his Remarks and Observations, p. 80. where he supposes the New Directory to make the bearing and distance of P°. Condore from P°. Timoan N $33^{\circ} E.$ 140 leagues, whereas in p. 83, it is very plainly declared to be only N $26^{\circ} 30' E.$ distance 125 leagues. This is the consequence of a round-about way of computing the longitudes from the Lizard (a great way off, and of course very precarious) when they ought, fairly, to be computed only by the run between the two places, where celestial observations are wanting. If P°. Condore is laid down rather too far to the Eastward the error is excusable, 'till proved such, as conforming to the celestial observation of F. Gaubil.

(b) When you reckon yourself near the length of P°. Timoan, keep your lead going, and when you have 32 or 33 fathoms soft clay, you may reckon yourself not far off the islands; but come not under 30 fathoms, lest the currents set you among them.

if you think proper; but be on your guard, especially in the night, against the tides setting in between these islands.

Ships bound for the Indies must thence take their course towards the Straits of Malacca, and to enter therein conform to the Instructions in page 79. Those bound to Batavia, or directly to Europe, may observe what follows.

In sailing from 5 or 6 leagues to the Eastward of P^o. Anore, you steer SSE. 20 leagues, then S^bE. so as to go clear of the banks said to be in twenty-five or 30' N. lat. NEbN. of P^o. Lingen; when they are passed you may steer S^bW. as far as the Equinoctial line, and continue this course so as to pass, according to computation, 12 or 13 leagues to the Eastward of P^o. Lingen. I do not advise you to keep this track, on account of the dangers which surround the East part of this island; there are none which render the access dangerous; only to prevent the effect of a current, which at this season sets to the S. Westward, (c) so that if you make a direct course from P^o. Anore, just to go without P^o. Lingen, 3 or 4 leagues, you run a risque of falling, in the night and thick weather, upon the Dominis, or the East point of Lingen. I have remarked, by working the routes of several ships, that the greatest difference, to the Westward, did not exceed 8 or 9 leagues at farthest; so that observing what I have just mentioned, I imagine you may always pass 3 or 4 leagues wide of P^o. Lingen.

About 9 or 10 leag. off P^o. Lingen you have about 24 or 26 F. but so soon as you are in 20' or 15' N. if the currents set to the Eastward, stand in towards P^o. Lingen, 'till you shoal your water to 20 or 18 F.

From this island you sail towards P^o. Taya (according as you find the currents;) but if you should happen to fall so far to the Eastward of P^o. Lingen as to prevent your seeing it, you must then steer SW. to get sight of P^o. Taya, and pass between it and the Seven Islands, keeping them 3 or 4 leagues distance (d). From hence, S^bW. will lead you to Batacarang Point, which, as I have already said, bounds the West side of the entrance of the Straits of Banca.

The bearings of Monopin Hill (which may be seen a great way off in fine weather) will better direct you how to enter the straits; in particular you must not approach the Island Banca, but keep along Batacarang banks, in 8 or 9 fathoms, 'till you have passed the Rock Frederick-Endrick; the more the depth increases the nearer you are to it.

In sailing from the Seven Islands to Batacarang Point, when you are 4 or 5 leagues from the entrance of the straits, if the night or thick weather prevent your seeing Monopin, it will be necessary to anchor, and wait for clear weather, or the return of day, to enter; otherwise you may fall foul of Frederick-Endrick, or the Banks of Batacarang. As the North and East parts of Banca are not well known, there are reckoned a greater number of islands than are laid down in the charts. Here follows a remark, taken from the English Pilot:

“ Capt. John Harle, in the Macclesfield, coming late from China, the sun in his zenith (e), and deceived by the SE. currents, took P^o. Toties for P^o. Tonpon or Taya, and fell in with the back side of Banca: He found very good soundings in 18 or 20 fathoms, at a reasonable distance off shore, with some small islands on the coast, but so near that none would covet to go between them: He went between the islands that lie off, and the S. (East) end of Banca, in mid-channel, 18 F. but he believes they might have gone much nearer the shore, and recommends it as an extraordinary passage. Whether this has affected the Dutch or not, I “ cannot

(c) But it sometimes sets strong to the Eastward; which you must be very careful of here, and which you may know by the depth of water, having, in the fair-way from Lingen to P^o. Taya, from 18 to 20 fathoms.

(d) But in case of the currents setting to the Eastward, you may pass within a mile of P^o. Taya without danger. From hence, in the fair-way to the entrance of the straits, you have from 15 to 10 fathoms, and when you begin to look out for Monopin Hill, edge over towards the Sumatra shore, to 7 or 8 fathoms; keep in that depth 'till you get sight of Monopin Hill. As you deepen your water, haul towards the Sumatra shore; and as you lessen it, haul towards Banca, not going within 6, nor without 8 fathoms, 'till you bring Monopin bear East, and Batacarang West, when you are clear of the Frederick-Hendrick Rock.

(e) When the latitude cannot be ascertained with the instruments commonly used at sea.

"cannot tell; but it is very certain they have since sent a ship to make a complete discovery of it."

Although no accident happened to this ship, the same success is not always to be expected; I would always advise to beware of falling into the like inconveniency.

Frederick-Endrick being passed, shape your course to range along the banks which project about 3 miles from the mouths of Palimbam River, rather than the coast of Banca; you must also be mindful of the tides of these rivers, in order to avoid being driven on the banks by the flood, or on the coast of Banca by the ebb (*f*). When you are past the Fourth Point, keep along Sumatra as far as the Third Point (*g*), and go within 2 miles thereof, then towards the Nanka Islands; from thence you shape your course towards the Second Point of the Strait (*h*). By so doing you escape the mud bank, which fills up the bay between these points. I have already spoken of it, in p. 115, in the article concerning this Strait: I have in that place also taken notice of the tree, which in sailing from the Northward easily distinguishes the Second Point from every other place upon the coast.

There is nothing to fear beyond this, provided you keep 2 miles off shore, as far as the First Point (*i*), and when past it you stand to the Southward, so as to pass 2 leagues to the Westward of Lucepara; at this distance you avoid the shoals which surround it. The principal reef, and that which most requires your notice, is situate between the First Point and this island; sometimes the sea breaks upon it. The best method to guard against it is, after passing the First Point, not to sail above a league and a half from the Sumatra shore, which lies SbW.

When Lucepara bears East, at the distance above mentioned, you steer SE. to pass it and get into deeper water. You are sometimes obliged to edge to the Eastward, on account of the tides, which, in coming out of the Straits of Banca, take their course towards Great-Tree Island. It being very shoal along this coast, renders its access dangerous: It will therefore be necessary to keep the lead going.

Or, when you approach the First Point of Sumatra, haul in towards it, and when abreast of it, about 3 miles off, you will see the Island Lucepara SSE $\frac{1}{2}$ E. 5 leagues, then steer S $\frac{1}{2}$ E. 'till it bears SE $\frac{1}{2}$ E. keeping about 3 miles from the Sumatra shore; then steer South, till it comes out ESE $\frac{1}{2}$ S. the First Point NbW $\frac{1}{2}$ W. and the Southernmost part of Sumatra in sight SSW $\frac{1}{2}$ W. then edge over to the SSE. towards Lucepara 'till it bears E $\frac{1}{2}$ S. or East; then steer SEbS. 'till it comes out EbN. and ENE. then steer SE. 'till you have brought it NE. 5 or 6 miles; then steer SEbE. 'till it bears North and NbW. and then you are clear of the banks. By well observing these courses and bearings you will have no less than 5 or 4 $\frac{1}{4}$ fathoms.

From Lucepara shape a course towards the Two Sisters (commonly called the Two Brothers) already spoken of, page 112 (*k*). I thought it my duty here to repeat, that their reciprocal bearings is not a sufficient guide to sail from one to the other, because the irregular course of the tides almost always causes a considerable change in the direction of the course steered: It is necessary therefore to have recourse to sounding, and after losing sight of Lucepara to keep as much as possible in depth from 9, to 12 and 13 fathoms: If ye find it less than 9, as may happen, especially about the bank off Great-Tree Island, edge a little to the Eastward; but if you meet with more than 12 or 13 fathoms, near the Two Sisters, you must haul in to the Westward: By this means, and often sounding, you may always be sure of making the Two Sisters. However, you must not expect between Lucepara and the Two Sisters to find very regular

(*f*) It is best to keep mid-channel, 'till abreast the Fourth Point.

(*g*) Here the currents run very strong and uncertain, sometimes 18 or 24 hours one way; therefore 'tis not adviseable to sail here in the night.

(*h*) I can meet with no occasion for this angle, but think if you keep 6 or 7 miles off the Sumatra shore, in depths from 10 to 12 fathoms it is sufficient.

(*i*) Between the First and Second Points lies a shoal off the Banca shore, almost mid-channel over; so that you must a'fo take care you do not come half channel over towards Banca.

(*k*) Capt. Haggis makes them to bear nearest NbE. and SbW. of each other, and just 2° difference of latitude between them.

very regular soundings, the inequalities are sometimes considerable; but you cannot be deceived if you keep constantly sounding.

On approaching the Two Sisters, if you have not a perfect knowledge of them before night, it will be better to anchor, or put about, than hazard the passing them in the dark, and thereby risque either the running on the Shabanders, or the other bank lying EbN. of these islands (*l*), there being no other way to avoid these dangers than by keeping a proper distance from the Two Sisters.

To judge from what has happened to several ships that have made this passage, it seems as if from Great-Tree Island the currents, at this season, set frequently to the S. Eastward; so that some have found themselves within sight of the island Nordwak, or the North Watcher, instead of the Two Sisters. The depth will prevent your being mistaken, having 15 or 16 fathoms about the former, and only 12 near the Two Sisters.

Therefore, after you have passed the shoal of Great-Tree Island, haul in a little to the Westward, and by keeping $9\frac{1}{2}$ or 10 fathoms, you will be sure to make the Two Brothers; but if you exceed 11 fathoms, you will scarcely be able to weather the Two Brothers; but fall in with the North Watcher. If in the day-time, and clear weather, you may keep sight of the Sumatra shore; but come no nearer than 9 fathoms, because there is a shoal lies not far off it, which is steep to, from 7 fathoms. On sight of the Two Brothers, endeavour to pass them within 2 or 3 miles, for the reasons assigned in page 112.

If for want of observing this, or by contrary winds, you are obliged to pass between Nordwak and the Two Sisters, you range the former at a league distance, instead of keeping mid-channel, by which means you avoid the bank above mentioned.

Having passed Nordwak, if you are bound through the Straits of Sunda, you must take care of a rock under water, which the ship Jason struck on, in 1742, on her return from China. This rock lies 2 leagues WNW. of the little Island Destan, or the Western Island, about 5 leagues SbW. from that of Nordwak.

Ships from the Straits of Banca, bound to Batavia, generally make this island, from whence they sail along the Thousand Islands to the Eastward, as far as the little Island Sudwak, or the South Watcher, 9 leagues NNW. off the entrance of Batavia Road.

SSE. about 2 leagues from the South end of the Two Brothers, lies a shoal even with the water's edge, on which the Dolphin was ashore.

As for those who go through the Straits of Sunda, from the Two Sisters, they shape their course so as to pass a league to the Eastward of North Island, near the coast of Sumatra, and 7 leagues NW. from Bantam Point (*m*).

The winds at this season, blowing from the Westward, and the currents sometimes setting out of the straits, it is necessary, hereabouts, to keep on the coast of Sumatra, rather than that of Java, in order to enter the straits with less difficulty.

You have 20 fathoms a league off North Island, so that if it happens to be calm you may anchor near it, for it will not be prudent to lie driving about at the strait's mouth. From North Island, or hereabouts, you steer to go to the Eastward of the Great Cap, or Button; then between the little one (*n*) and the South point of middle Island, or Thwart the Way. As

(*l*) As had like to have happened to the Worcester, Capt. Hall, in 1765, they having mistaken some high-land on Sumatra for the Two Sisters, which at sun-set bore SSW; but having a squall in the night, they anchored in 11 F. and at sun-rise saw Sumatra $\frac{1}{2}$ SWbS. to W. Now had they not anchored, they would have run into danger; therefore it is proper to have a perfect sight of them, if you intend sailing in the night. At first sight, coming from the Northward, they appear in one, though two round islands, and may be seen 6 or 7 leagues. You may sail as near as you please to the Westward of them, having 10 or 11 F. within $\frac{1}{4}$ of a mile of them.

(*m*) From the Two Sisters steer for North Island between SWbS. and SW. North Island is pretty even land, of an oval form, and appears at first rather low, though it may be seen 7 or 8 leagues. The coast of Sumatra to the S. Westward of it is shoal, having only 4 F. and, 2 miles off shore; but you may go quite close to the island to the Westward of it, and have very deep water. If you intend watering at North Island anchor with the island NNE. the middle of the Three Sisters SWbS. $2\frac{1}{2}$ miles, the Button SSE $\frac{1}{4}$ E. the watering-place, which is a sandy beach, will then bear about SSW.

(*n*) But take care to avoid Brower's Sand, by not bringing this Cap and Anger, or Anjeer Point, in one. There is also a small shoal with only 3 fathoms, when the Button bears NNW. the Cap SW $\frac{1}{2}$ S. 2 leagues; and Gertry's Island NNE. likewise, when the Button bears SEbS. 2 miles, there is a rock under water.

As soon as you have passed the reef, which projects from the South point of the latter to go towards Prince's Island, you keep to windward, without coming near the coast of Java, whence it will be difficult to claw off with the winds of this monsoon, which generally are from NW. This reason should also prevent your going to anchor at Cantaye or Mew Island. As the ships which want water may be supplied at Prince's Island, the most convenient place is at the foot of the high mountain on the SE. side of the island; but the anchorage there is not good, having no less than 30 fathoms very near the shore.

Watering
Place at
Prince's
Islands.

On the SE. part of Prince's Island is a high peaked hill, the highest land upon the island: This hill bearing from SW. to NNW. you have good anchoring ground from 36 to 44 fathoms, about a mile off shore; and this hill bearing from N $\frac{1}{2}$ W. to WbN. little more than a cable's length off shore, from 10 to 30 fathoms, coarse sand with shells and coral. Or bring the high hummock SWbW. and the Easternmost point N $\frac{1}{2}$ E. and you may anchor in 38 fathoms, fine sandy ground, about three quarters of a mile off shore. The boats go for water about the Southernmost point in sight, till they bring the said hummock NWbN. when they will open a small sandy bay, at the Easternmost part of which is a run of fresh water, and a path cut through the wood to the place where you fill, about a 100 yards up) very convenient for rolling your cask; but, if you fill below, depend upon it your water will be brackish, though you fill it at low water. But this place has been objected against, as the boats have to row round the point against the current, so that they can make but one trip a day; therefore ships, for the convenience of watering, may anchor right off the watering place, where you are as well defended from the NW. winds as at the former, and the SW. wind blows equally in on both, unless you run in there under 35 fathoms, and then you are in a manner land-locked, which cannot be done off the watering place. But the convenience is so great, and the hazard so little, that I would anchor with the high land bearing NWbN. in 35 fathoms, soft ground, half a mile off shore.

Between Middle Island and several others to the Eastward of Hog Point is a very fine channel to enter the Straits of Sunda, coming from the Northward. This channel seems advantageous, especially in this season, because it affords much better shelter from the winds than that between the Fourth Point and Middle Island. Those who would pass through it, must steer from North Island, so as to range very near the islands lying along the coast of Sumatra (o), that they may anchor there, in case of a calm, and when they have passed the Southernmost of them, steer so as to pass on the same side of Cracata island (p), and then towards Prince's Island.

To the N. Eastward of Middle Island there is a rock near the water's edge, on which the sea breaks (q); this rock, and the want of anchoring ground in mid-channel, renders it difficult, so that, upon the appearance of an approaching calm, I would not advise you to attempt it; but if it should happen, that after having passed Middle Island, the current should drive you back thither, you must resolve to anchor and wait for a breeze. Though the charts mark no soundings to the Westward of this island, yet there is 45 fathoms $1\frac{1}{2}$ league off.

Several navigators have thought to go out of the Straits of Sunda by the channel between Prince's Island and the coast of Sumatra: I think it would succeed better than passing to the Northward of Middle Island; but the winds from N. to NE. which favour this passage, are generally not of long continuance; moreover the way being long, you may be liable, during the succeeding calm, to be tossed from side to side by the currents, without being able to help yourself; besides, in this part, especially to the Northward of Prince's Island, there is no depth for anchoring but very near shore, and the monsoon wind blowing afterwards, you may be

(o) Capt. Hall passed close to all these islands, and found them steep to.

(p) But observe herein, when you have passed Middle Island or Thwart the Way, not to come too near Hog Point, because off it there are several rocks under water. Capt. Hall saw them break for at least $\frac{1}{2}$ a mile. And also, that SSW. 2 leagues from P^o. Cracatao there is a dangerous rock under water.

(q) It lies, according to a curious Dutch draught, about 2 leagues from this island, and WbN $\frac{1}{2}$ N one league from the Button. There is also another at the NW. end, called the Stroom Rock, which looks like a boat turned upside down; but at high water there is only a rippling to be seen over it. Capt. Hall says that you may go very close to the Westward of it.

after many difficulties, obliged to go through the channel between this island and the coast of Java, by which ships are accustomed to go out, on account of the winds and currents which facilitate this passage (r). But notwithstanding these advantages, whether you sail from the anchorage at Prince's Island, or come directly out of the straits, you must keep as near this island as possible, and avoid approaching that of Cantaye (s), from whence, at this season, it will be with great difficulty you get off again: In this manner, having reached the West, or rather South point, you sail along the rocks called the Carpenters, which project out from its extremity. Here is no danger at the distance of a stone's cast.

Here you often meet with a violent opposition between the wind and tide, when the sea, agitated, rises and breaks furiously upon the West point of Java (t), which is a sufficient proof that it is indisputably necessary to keep on the opposite side, to prevent being exposed to evident danger.

As soon as you are out of the straits, you haul your wind, standing to the Southward, to get into the variable wind's way, by favour of which you may reach the Cape of Good Hope, or the islands of France (u) and Bourbon (x).



DIRECTIONS for sailing through the Straits of SUNDA, to BANTAM or BATAVIA in the WESTERN MONSOON.

WHETHER you come from the Indies, or any other part to the Westward, you endeavour to make Engano, or the Deceitful Island; then with the Westerly winds you sail towards the South point of Sumatra, from whence this island is 35 leagues distant: This extremity terminates in a low point, covered with trees, very near which lies the little island Fortune (y), low and woody, like the former. On Sumatra you may see several high mountains.

Afterwards you steer so as to go to the Southward of Cracata Island, and from thence you pass between Middle Island and the Little Cap, conforming to what I have already said, in the beginning of the preceding Directions.

If there is any danger in the passage between P°. Cracata and Sabeffi (z) Island, it is at least apparent: And as the winds and currents are favourable in this monsoon, it will be convenient to pass them, as well as between Middle Island and those to the S. Eastward of Hog Point, especially as this course is straighter than that just mentioned.

When you are $1\frac{1}{2}$ league to the Northward of St Nicholas Point, if you would go to Bantam, you must approach P°. Panjang, a long and flat island, which you may pass on either side; only observe its South point is dangerous. The West channel has 6 or 7 fathoms water, and the East channel, which is wider, 8 or 9. Having passed this island, you see, upon Java, a round hill, which, when it bears SSW. the town of Bantam is in one with it: You must keep

(r) The Dutch call this Behouden, or the Safe Passage.

(s) Or Mew Island.

(t) Or Java-Head.

(u) Mauritius.

(x) Donmaschareen.

(y) Capt. Hall, of the Worcester, makes this island to lie in $5^{\circ} 58' S.$ consequently it is laid down in the Charts too far to the Northward; and so most probably must the adjoining coast: However, the charts cannot be rectified, 'till I can procure a circumstantial account of the said coast; but I give this caution to the ingenious mariner, to put him on his guard.

(z) Sebezo, or Tamarin Island, rather; Sabeffi, or P°. Bessys, being still further to the Northward.

keep on 'till opposite Golgatha Island, off which is the road, where you anchor, 5 or 6 fathoms, mud.

If you go to Batavia, when you are a league to the Northward of St Nicholas Point, you must steer Ebs. to go between the coast of Java and the islands of P°. Baby and Tidang (a) lying on the North side, and continue this course 'till within sight of the Great Cambuis, (b) bearing thus 15 or 16 leagues from St Nicholas Point. You may come within a mile of the North side of it, and still nearer to the Little Cambuis (three quarters of a league Ebs. of the Great one) whereby you will avoid several shoals which lie to the Northward (c).

Middle-
burg and
Amster-
dam
Islands.

Two leagues SEbE. of the Little Cambuis is the Island Mildeburg, near which is that of Amsterdam, which you also pass to the Northward. The depth in this tract is 13 or 14 fathoms. Having passed these two, to enter the Road of Batavia, through the great passage, stand to the Eastward, to come within three quarters of a league to the island Edam, from whence you stand to the Southward, leaving Horn Island to the starboard, and that of Enchusen to the larboard. This tract will lead you opposite Batavia, where you may anchor in what depth you think proper: The road is always full of ships, of all the Indian nations, who come hither to trade. This town is the chief of the Dutch settlements in the Indies; and here the general and head consul reside: It lies in the latitude of 6° 15' South; as to its longitude the astronomical observations made of it do not appear exact enough to be followed.

I have shewn, in my Preface, pages xiii. and xiv. the methods I have taken to determine it 104° 22' East from the Royal Observatory at Paris. This determination is in my opinion the justest that can at present be given of it.

From B A T A V I A to the Straits of B A N C A.

I shall not here give a description of Batavia; it may be found in almost all the relations of the East-Indian travellers, and in other historical and geographical works, which are sufficient to instruct the curious.

Going from Batavia to the Straits of Banca, you must steer NNW. for the South Watcher, 10 or 11 leagues from Batavia Road. You may pass it either to the East or West, three-quarters of a league. If you go to the Eastward, you must approach it before it bears NW. in order to avoid a little bank, called (by the Dutch) Nasomver's Drooght, about 2 leagues to the S. Eastward. When the South Watcher bears SE. if you do not chuse to sail along the Thousand islands, you may stand to the Northward, and NbE. to go wide of them, and pass between the bank or sandy island, called Brouwer's Drooght, and that of Prince's Drooght: The first lies about 7 leagues NE. of the South Watcher, in 5° 24' N. latitude; the other 8 leagues NWbW½W. of Brouwer's Drooght, in 5° 12' N. Being in the latitude of 5°, steer a NNW. course, as far as 4°, to get into 12 fathoms to the Eastward of the bank off Great-Tree Island; and care must be taken to sound from time to time, to prevent falling to the Westward of your reckoning: On the contrary, if the soundings shew by a great depth that

(a) Or Wapen Island.

(b) Or Cambuyse.

(c) Our Author has been very short, but I cannot say so sweet in his directions for this passage; because there are several very dangerous shoals, which lie in the way, of which he has not taken the least notice, not even in the lump, so as to caution the navigator to be upon the look-out; but only as if all was safe, and all the dangers were left to the Northward. As he has been very particular hitherto, I am sorry he shou'd seem to tire at the last. For the particulars, I shall at present refer you to the charts, as some of them have beacons on them, and the others break, by which they may be seen before you come to them; and shall only give a description of that on which the Lyell was aground, in 1734, which I have not seen inserted in any chart hitherto: It bears WbN½N. 7 miles from the West end of the Great Cambuyse, and NNW. 4 miles from Maneater's Island.

that you are to the Eastward, you must then steer more Westerly than the course prescribed, in order to gain 12 fathoms; after which you may follow the directions in page 114, as well for entering the Straits of Banca as for going through them.

I had a design of making this Directory more extensive, and to have concluded with some instructions concerning the navigation of the Molucca and Phillippine Islands; but for want of being able to collect all the memoirs necessary for my scheme, I thought proper to decline the undertaking, as the importance of the subject requires an exact and very circumstantial detail; for I know by experience to what dangers ships are exposed by dubious instructions; therefore, in the course of this work, I have omitted many, which appeared to me doubtful: If navigators, desirous of the public good, will communicate to me any particular remark, or acquaint me of any error that may have escaped me in this impression, I shall be indebted to them for the favour, and they will have the honour of contributing to render this work, of which I have printed but a very small number, more complete against the next edition.

F I N I S.



A TABLE of the Variations observed in different Parts of the East-Indies, both in the Northern and Southern Hemispheres.

Observations made in sailing from the Cape of Good Hope to the Islands of France and Bourbon, in the years 1740 and 1742.

Variations.	Latitude.	Longitude according to Peter Goos.	Longitude from Paris.
N. W.	South.	D. M.	D. M.
16d. 35m. in sight of Cape Falfo.			
17 40	35 50	40 0	16 20
18 15	36 41	43 14	19 34
19 20	36 30	45 0	21 20
20 40	36 20	46 0	22 20
19 45	36 34	47 50	24 10
21 40	37 7	48 10	24 30
22 20	37 5	51 0	27 20
22 30	36 25	53 15	29 35
23 0	36 36	54 40	31 0
23 15	37 0	55 10	31 30
25 0	38 0	59 40	36 0
25 10	37 30	59 30	35 50
25 30	37 40	63 10	39 30
25 0	36 2	67 9	43 29
25 20	36 20	72 30	48 50
24 30	35 45	75 30	51 50
22 50	34 30	77 40	54 0
22 15	33 30	78 30	54 50
22 0	35 0	82 20	58 40
20 30	30 4	81 30	57 50
22 30	36 15	81 40	58 0
20 0	29 50	82 50	59 10
21 30	35 5	84 0	60 20
19 15	32 0	81 15	57 35
18 30	29 20	84 0	60 20
18 0	30 10	85 30	61 50
Within sight, and East of the Island Rodrigue or Diego Rays, observed 13° 30'.			
In the harbour of the Island of France, or Mauritius, 16° 30' NW.			
At Bourbon, or Don Mascarinba Island, in St Dennis Road, observed 19° 30' NW.			

In 7° 53' N. lat. in the sight of the E. coast of Africa 13° 30' NW.
 In 9° 50' NW. in sight of Cape Guardafui 12° 40' NW.
 From Cape Guardafui to the Straits of Babel Mandel, from 12° 40' to 13° NW.
 In sight of the East point of Soccatra Island, 12° 0' NW.

* At Cape Comorin the variation is 3° NW.
 At the Island of Zeloan and parts adjacent is 3° NW. on the West coast; and 2° 1/2 on the opposite side. All along the coasts of Coromandel, Golconda, Orixa, and throughout the Gulph of Bengal, the variation is from 2° 30' to 2° NW. It decreases on approaching the Equinoctial line, and increases afterwards, by sailing to the Southward and Westward, in the Southern Hemisphere.

Observations made in sailing from the Islands of France and Bourbon, to the Indies, passing through the channel of the Amiran Islands.

Variations.	Latitude.	Longitude according to Peter Goos.	Longitude from Paris.
N. W.	South.		
D. M.	D. M.	D. M.	D. M.
16 20	26 15	85 30	61 50
15 20	25 0	85 40	62 40
19 30	19 25	74 9	51 4
19 30	18 30	73 50	59 45
19 0	16 30	72 30	49 45
17 10	12 26	70 20	47 15
15 15	6 51	70 0	46 55
North.			
10 30	5 20	75 30	52 25
11 0	5 5	76 45	53 40
10 0	4 52	77 0	53 55
11 0	7 12	79 6	55 21
9 20	10 58	83 45	60 40
7 10	9 40	81 30	58 25
6 30	11 25	83 0	59 55
4 30	14 30	93 55	70 50
4 0	Within sight of the Malabar coast, in the same latitude.		
In the foregoing table, the longitude of the Cape of Good Hope is supposed to be 15° East from the Royal Observatory at Paris, according to the observations of Dr Halley, at the Island of St Helena, and from the difference of Meridians between it and the Cape, taken from ships tracks.			
In this Table, the longitude of the Island Bourbon is supposed to be 52° 30' from the Royal Observatory at Paris, according to the observations made at St Dennis by the author.			

Observations of the ship Hartford, sailing from Java-head to the Island St Helena in 1732.

Variations.	Latitude.	Meridian distance from Java-head.	Longitude from Java-head.
N. W.	South.	D. M.	D. M.
3 28	9 59	0 43	0 45
4 45	13 43	3 31	3 36
4 52	15 18	6 1	6 9
4 51	13 12	17 28	18 0
6 8	19 59	21 17	22 1
10 3	21 0	30 28	32 12
15 15	23 16	37 18	38 58
18 2	25 11	40 30	42 33
19 0	26 18	42 42	44 15
21 45	27 23	44 17	46 34
24 23	30 25	51 29	54 52
24 50	30 27	56 40	59 21
24 15	31 23	61 37	66 3
23 51	32 47	63 0	67 44
20 16	34 58	73 36	79 44
20 7	35 33	74 42	81 24
19 7	35 41	77 2	87 12
17 30	36 25	77 56	87 38
16 9	38 18	77 84	87 26
19 40	37 58	77 21	85 15
15 45	37 4	76 54	84 42
At the same time he judged the Cape of Good Hope to bear NNW. 154 miles.			
16 14	36 15	77 59	85 14
15 45	35 33	79 5	86 10
14 40	32 23	81 9	87 9
12 39	27 18	84 52	89 18
11 20	21 45	89 8	92 20
8 0	16 0	97 43	99 53
At noon Barn Point, on St Helena, bore W 1/2 N. 4 miles.			

Observations made in sailing from the Cape of Good Hope to Java, in 1740 and 1741.

Variations.	Latitude.	Longitude from the C. of Good Hope.	Longitude according to Peter Goos.
N. W.	South.	D. M.	D. M.
17 0	37 5	1 30	40 10
20 0	36 50	8 20	47 0
20 42	37 34	8 30	47 10
20 30	37 20	10 0	48 40
22 30	37 30	16 10	54 50
24 0	37 20	20 0	58 40
25 30	38 20	25 20	64 0
25 0	39 0	29 10	67 50
22 30	38 38	37 30	76 10
23 0	35 8	38 20	77 0
21 42	38 10	43 10	81 50
21 30	36 0	46 20	85 0
20 30	36 15	48 15	86 55
20 0	37 28	50 0	88 40
20 0	36 10	52 10	90 50
18 20	35 10	56 20	95 0
17 30	35 0	59 0	97 40
9 20	24 54	66 0	104 40
8 30	33 25	66 20	105 0
8 19	25 24	67 20	106 0
12 30	32 40	68 50	107 20
10 30	31 20	71 20	110 0
9 25	29 0	73 0	111 40
6 0	24 35	73 0	111 40
3 30	14 30	83 30	122 10
8 20	26 0	76 0	114 40
5 0	17 24	84 0	122 40
2 40	10 0	86 30	125 10
8 30	29 26	80 20	119 0
7 15	25 30	82 20	121 0
6 20	24 30	83 0	121 40
5 20	16 25	87 40	126 20

Observations made in sailing Moka, or Mocha, to the bar coast, in the years 1740 and 1742.

Variations.	Latitude.	Longitude according to Peter Goos.
N. W.	North.	D. M.
12 50	12 23	70 10
12 30	12 37	72 50
12 15	12 57	74 20
12 0	13 20	74 50
11 40	14 0	77 20
9 0	14 0	84 20
7 0	14 0	87 30
6 15	13 40	90 30
5 0	14 30	92 30
4 30	14 10	94 30
3 50	13 30	within sight of the coast of Canary.
the remainder of this Table.		
Observations made in sailing the Straits of Sunda Rays, in the year 1741 and 1742.		
Variations.	Latitude.	Longitude from Java-head.
N. W.	South.	D. M.
2 38	7 55	0 35
3 5	9 35	0 38
3 15	within sight of	
3 40	10 30	0 40
4 0	11 34	4 50
6 30	17 52	21 0
8 0	20 32	29 20
9 10	20 0	30 30
11 0	19 47	34 40
12 0	19 25	37 50
13 30	within sight of	

In the Straits of Malacca, the variation was observed, in 1741, 1° 30' NW.

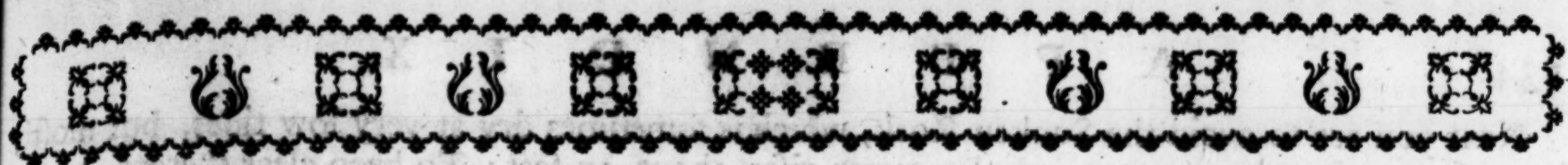
At P°. Auore - - - - - 45 1/2 NW.

At P°. Condore - - - - - 20 1/2 NW.

From thence, going to China, it decreases to no variation at the latitude; afterwards, as far as the Ladroon Islands, the variation increases to 1° 30' NW.

In the Straits of Sunda the variation is 2° 0' NW.

At the entrance of that of Banca, or about Lucep-ra, 1° 30' Between the Straits of Banca and P°. Auore it decreases.



A P P E N D I X.



INSTRUCTIONS *for knowing the Land, and going into* BOMBAY HARBOUR.



THE high land of Choul is bluff to the Northward, and the Southernmost part low land, stretching out to the Westward, making very much like islands: To know the land.

From thence to the Northward, you will see the high land of Tull; and then the Island Caranjar, which is very remarkable, having a high hill at each end, and extremely low in the middle: The Southernmost of these hills makes not unlike a ship's bottom, near the Northernmost end whereof there yet remain the ruins of an ancient monastery, by which ships steer when bound into Bombay harbour. A little to the Northward of Caranjar lies a small high island, called Elphanto, which appears, at the distance of 4 or 5 leagues, with Caranjar, like three separate islands, to the Eastward of which is a very remarkable high land; that part under which Bombay lies, makes like a neat's tongue, the bluff to the Northward, which may be seen in clear weather, 17 or 18 leagues. As you run in for the land from the Westward, you raise Malabar Point; this is the first part you will see of Bombay Island, which appears flat and full of trees. The Islands Hunary and Canary, two small islands, in latitude $18^{\circ} 50'$ North, are not to be seen further than the tombs on Old Woman's Island.

To go clear of the reef or prongs, which run out from Old Woman's Island, keep the Funnell To round the reef. or Savajee Castle just open with the White Building, or ruins of the Ancient Monastery, on the Southernmost hill of Caranjar; or if in thick weather, that you cannot see the Funnell, then keep the said building EbN. or $E\frac{1}{2}N$. 'till Hunary, the Westernmost of the two islands, bears $S\frac{1}{2}W$. or South; or that you have Cross Island, a small round island above Bombay Harbour, well open to the Eastward of Oyfter Rock, when you may safely haul round the SE. prong of the reef for the road.

I would not advise a stranger to round the reef under 9 fathoms, lest he be hampered between the prongs, as does sometimes happen. In 6 and 5 fathoms you have hard ground and overfalls.

If you are obliged to turn it, be on your guard against the indraught into Penn River, and tack in about $6\frac{1}{2}$ or 7 fathoms, according as you find the tides; but after any great rains you have strong outlets from the rivers.

To avoid
the Sunken
Rock.

Next you are to avoid the Sunken Rock, which is sometimes dry at very low tides, but mostly has 3 feet on it at low water, and the water rises about 17 feet: To keep clear thereof, to the Eastward, the long mark is Mazagon House, which is a square white house, under Mazagon Hill, kept open a large sail's breadth with the Easternmost bastion of Bombay Castle; and steering with these bearings you generally have 8 or 9 fathoms, 'till you are the length of the Oyster Rock; and for a thwart mark bring the Westernmost white tomb, on Old Woman's Island, open to the Northward of the Easternmost tomb on the said island.

N. B. The tombs in one is the mark for the rock; and open either way you are above or below it (a): Another thwart mark are five brab-trees on Old Woman's Island, planted thus, the middle one being in one with Malabar Point; the rock is then in the same direction. If you go to the Westward of the Sunken Rock, between that and Oyster Rock, which is a clear channel, of about a mile in breadth, having 4 fathoms, oazy ground, between the rocks, almost close to; the leading mark is to keep Mazagon House shut in behind the highest part of the castle; but ships generally pass it to the Eastward, where they have more sea-room.

To go
clear of
the middle
ground.

To round
the North
head of
the middle
ground.

When you are past the Sunken Rock, steer for the ships in the road, keeping Cross Island open to the Eastward, or if you go the inner passage, then open to the Westward of Sion, or Siam Hill, which is the highest on Bombay, and has a fort on it; and when you have shut in Malabar Hill with the trees on Mendam's Point, you are above the lower end of the middle ground, and then you may birth the ship as you think proper, in 4 or 5 fathoms: But the best ground for European ships is to keep the brab-tree open; but if the wind hangs in the NE. quarter, it is much the best way to work it round the North head of the middle ground, as the tide holds longer there than towards Old Woman's Island, and you likewise gain a leading wind to birth your ship; and when you have the brab-tree, in the castle, open to the Northward of the flag-staff, you may run in with safety.

In the harbour it flows, full and change, nearest SbE. and NbW. or $\frac{1}{4}$ after 11 o'clock.

To round the Reef off POINT PALMIRAS, and so into BALLASORE ROAD either by Night or Day. By Capt. JONATHAN RANSON.

By the
different
sorts of
ground
to know
whether
you are to
the North-
ward or
South-
ward of
Point Pal-
miras.

AS the mistaking one point for the other (Point Palmiras for the False Point, and contrarywise) has been attended sometimes with fatal consequences, either by failing in among the dangerous reefs to the Eastward, or getting embayed in the False Bay; to avoid which observe, that between these two points, and all the False Bay over, you will meet with oazy ground of a greenish colour, and so soft that your lead will bury itself every cast: But any where to the Northward of Point Palmiras, having the Bay of Ballasore fairly open, you will have stiff ground, viz. bluish clay, with variety of mixtures, as you change your situation (to wit) the above with sand and shells, the same with gravel, with iron-stones, rotten-stones, and small pebble-stones, &c. &c. Some of these mixtures with clay you will have all the bay over, which being known is sufficient to rectify your judgment, whether you are to the Northward or Southward of Point Palmiras, should you be otherwise doubtful.

Nevertheless

(a) There were formerly three tombs on Old Woman's Island, but one of them has been demolished since this remark was first written, as likewise the brab-trees. The best directions concerning Bombay harbour are in Mr Nicholson's Remarks and Observations, lately published, pages 23—30, which I would recommend to the careful Navigator.

Nevertheless, I would advise all bound to the bay, to endeavour to make the land to the Southward, about Pondy (the last high land on the coast) or Jagrenot Pagoda; or if the weather should be hazy, as it frequently is in the months of April, May and June, so that you cannot make the land, then by your latitude endeavour to get soundings to the Southward of the False Point, keeping in 16 or 18 fathoms water, and you cannot miss the true soundings of the False Point, which are coarse sand and gravel stones, whereas by keeping too great an offing you may chance so to do. The land hereabouts is very low, and the False Point, should you see it, has nothing upon it remarkable to know it by, otherwise than its making a point by the land to the Northward trenching away, and baying so that you lose sight of it; but in the False Bay, should you happen to be well in, are two remarkable sand hills near together, whereby this bay may be known.

The best method to be sure of the soundings of the false Point

To know the False-Point and Bay.

From the False Point, to round the reef of Point Palmiras, the course is NEbE. 9 or 10 leagues. In falling off the hard ground of the False Point, you will come into soft oaze, as before observed, and with the observed course will hold your depth of water, with little or no variation, 'till you come upon the reef of Point Palmiras: Your first coming on will be fine light sand, and further on, coarse sand with gravel-stones; these being the soundings of the reef: Observe, you will deepen your water in falling off; when this appears evident to you, haul 2 or 3 points more to the Northward, 'till you come into stiff ground (to wit) stiff clay, with small stones, or with sand and shells, as before observed; when you may safely conclude, you have the Bay of Ballasore fairly open off the Point, and may steer in boldly NNW. for the road, having regard to the tides, which flow in the road at 9 o'clock on the full and change; the flood setting in NW. and the ebb SE. If you round the reef in about 18 fathoms water (which I esteem it best to do) you will have about 7 or 8 leagues run into 9 fathoms water, where the pilot-sloops generally lie, shoaling very gradually as you run in, and will find the ground as above described, only in 14 fathoms water, the dry sand-bank off the point bearing SW. there is a spot, not always met with, of a bright yellow stiff clay, like oaker, with small pebble stones. This spot lies rather to the Westward of the common track.

From False Point to the reef of Point Palmiras.

The best depth to round the reef in.

Should it so happen, as in some seasons of the year it may, that the pilots have all left the road, and you would send in your boat over the bar Ballasore, to give notice to the company's factor residing there, of your arrival; run in with your ship into 7 or 6 fathoms water at pleasure (this must be understood at low water, for upon the springs, the tides ebb and flow 11 or 12 feet in the road) bring the flag-staff at Buleramgury, or the Bankfall-house, to bear NNW. from you, and there anchor. It flows upon the bar on full and change at 10 o'clock, and the sending your boat from the ship should be so timed as that the first quarter flood may be pretty well spent, before they get upon the bar, to avoid the breakers, which upon the first of a flood sometimes break very high, and are dangerous. You ought not to forget to put a grapnail in the boat, and a compass, as they may both be useful: Keeping the above-said flag-staff NNW. by the compass, will lead them to the outermost beacons, or marks for the channel, which are poles pitched in the ground, on each side, at convenient distances one from another, and will lead them close on board the Southernmost point of the opening, where formerly the Old Bankfall-house stood, but the new house stands on the other side, at the bending of the second reach, going up.

For going over Ballasore bar with a boat.

To the above, it may not be improper to subjoin, that in sailing from Madras, for the bay, by Time in the month of June, it will be necessary, for reasons hereafter mentioned, to time your sailing so as to be in Ballasore Road before the full-moon happens in that month, or else 'till the last quarter is over; for in this month you may expect bad weather, which I have experienced never to fail, and have known it some years to hold 3 or 4 days together, very violent and mischievous in its consequences; in particular, in the year 1739, when the Revolution diamant, with three stout country ships, were lost in the gale, with all their crews, myself having by it.

To guard against the bad weather in the month of June. An unlucky accident occasioned by it.

Prognosticks of a gale

having the charge of another ship as pilot, at the same time cut from our anchors, with four feet water in the hold, and put to sea, and by God's providence we weathered the storm, with the loss of our mast, anchors from the bows, and some of our waste guns only, and in 10 days after got safe into Chitigon. These gales blow always against the monsoon at first, and then commonly back round to the NW. making a confused sea, 'till it fixes again in the SW. quarter, before it clears up: They generally happen between the full and last quarter of the moon (as I have hinted above) and to a diligent observer exhibit certain signs of its approaching, sometimes 5 or 6 days before it comes: If you find the SW. wind, which is that of the monsoon, die away, and have light airs of wind all round the compass, with intermitting calms, the weather more clear than common all round the horizon, objects looming, a murmuring in your rigging like wind, though none perceptible, a more than common smooth sea, and cobwebs streaming about your rigging, you may conclude that they are sure prognosticks of an approaching gale.

DIRECTIONS *for sailing through the Straits of DRYON* By Capt. JOHN HALLETT.

WHEN you have rounded the Little Carimon, keep in about 10 fathoms, 'till you have the opening fair between the Great Carimon and Sabone, then haul into 7 or 8 fathoms, and keep that depth on the starboard shore, which will carry you clear of the Middle-borough Ground (if there be any such thing) being informed by a Dutch commander, that it lies near the Two Twins, which you will open when they bear EbN. and when they bear NEbE. they will be shut in behind a bluff round island, which is of a reddish colour near the water, and then you may keep mid-channel. When you first open the Twins, you will see a small island, with a tree or two on it, between the Twins and the bluff island; but it lies without them considerably, as you will perceive running down the straits, and this probably is what is laid down for the shoal.

From the aforesaid islands and bearings, steer down the straits, about SbE. or SbE½E (having respect to the tides, which set strong and very uncertain) you will deepen your water to 12, 13, or 14 fathoms, and as you run on you will see the opening between the North and the South Dryon, beginning to open EbS. Southerly from you; and when the opening bears East you will bring a round island between you and the Gap: When it is on your larboard beam, about three quarters of a mile, you will have another island on your starboard beam at distance about 2 miles, and in 20 fathoms. This is the narrowest part. From this opening you keep nearest the larboard shore; and about 3 miles SSE. from the island you passed on the larboard beam is another, which you must give about a mile's birth, because of the round about it; and as you round this island you will open the Easternmost of the Three Brothers, bearing SEbE. When round this island you haul up ESE. and EbS. between the South Dryon, on the larboard side, and a large island with high land on it, on the starboard side. This part is about 5 miles over, and 17 or 18 fathoms all through, 'till you bring the Southernmost part of the South Dryon NEbN. or NNE. and the Easternmost of the Three Brothers SE½S and then your water shoals gradually to 13 or 12 fathoms.

Off the Southernmost part of the South Dryon, close in shore, lie three small islands and shoal without them; therefore come no nearer than a mile to the islands, the Westernmost of which makes like a tomb-stone.

There is a passage between the Three Brothers, but I believe not very safe; therefore, if the wind and tide will permit, 'tis safest to go round the Easternmost, and you will find regular soundings of 12 and 13 fathoms, mud.

From hence shape your course for the Calentagas, which lie North and South about 13 leagues in length, in soundings from 17 to 13 fathoms, mud: Here are strong tides, therefore it is best to anchor in the night.

When the Calentagas bear South, 5 or 6 leagues, you have 13 fathoms, mud. When you bring the Northernmost to bear SEbS. 4 miles, you have only 9 or 7 fathoms, hard ground, which I take to be the end of the sand that runs off from Tanjong-basso Point; for hauling in towards the islands, found the ground sometimes hard and sometimes soft: We rounded them from 7 to 9, and from 9 to 7 fathoms, mostly hard ground, and when they bore NNE½N. all in one, 5 miles, had 7 fathoms, soft mud, and afterwards hard ground: The Southernmost bearing NbW½W. 2 leagues had 9 fathoms, mud, and the islands all open again: When it bears NNW. 4 leagues and 11 fathoms, mud, you will see P°. Barella ESE. 7 or 8 leagues. The English Pilot lays down 17 or 18 fathoms all through, and a safe passage; whereas we found but 7 fathoms and hard ground; therefore I would advise you to go to the Westward of these islands, where you will meet with 10 fathoms, mud, all through, and no danger, keeping nearest the islands on the East side of you, to avoid two sunken rocks, which lie about a league off the Two Brothers. There are several rocks about these islands; but I believe none far off, except the above two.

Pullo Barella lies SE. 11 or 12 leagues from the Southernmost of the Two Brothers, for which shape your course, leaving it on your larboard side, about 3 miles, in 9 or 10 fathoms, and if you find hard ground, haul in for Tanjoon-boon Point; but do not go under 5 fathoms water, there being off it a very hard sand, and steep to. When you bring the said point West, haul into 7 fathoms, and go not without that depth, 'till you round Batacarang Point; and to be clear of the Frederick-Hendrick Rock, see the New Directory, page 125.

An Account of the Sand (e) to the Westward of the TWO BROTHERS (f), off the East Coast of SUMATRA, upon which the SANDWICH was a-ground in 1749-50.

JANUARY the 27th, Got through the Straits of Banca.

28th, In the morning saw the Two Brothers, then stood in for the Sumatra shore, and at a quarter past 3 P.M. run aground on a sand, when had the following bearings; the Northernmost part of Sumatra in sight, NbW. the Southernmost SWbW½W. the Southernmost of the Two Brothers SEbE½E. the Northernmost ENE. Northerly, distance 4 leagues (g); and from the Sumatra shore 4 leagues.

About 2 A.M. by the water rising a little, got off into 18 feet water, but soon after was off again; we got off a second time, and soon aground a third: By sounding round the ship, found the shoalest water 19 feet, except where she lay, which was only 17 feet, and a little way a-head was

(e) Called the Shabander. (f) Called, by the author of the Neptune Oriental, the Two Sisters. (g) The author of the Neptune Oriental reckons this shoal only 7 English miles from the islands; and some make it only 6. It seems to be very uneven, and scattered out very wide. For further particulars, see the Directory, p. 112, 113, 127.

was 4 or 5 fathoms. Set sails, started water, and threw some lumber over-board; so that with a fresh breeze, and a small swell, drove her fairly over by 10 o'clock. The ship thumped excessive hard, but made no water. Anchored in $4\frac{1}{2}$ fathoms, having been 19 hours from the first grounding to getting clear the third time.

The 30th, After sending the boats to sound, and finding no less than 4 fathoms, made sail again, and stood on for about 5 miles, when the ship struck again, but did not stick; on which anchored in $4\frac{1}{2}$ fathoms. The boats were sent out again, to the Southward, and to their great joy found the water deepen gradually to 9 fathoms which they had about 5 miles from the ship.

The 31st, In the morning got under sail again, and in a few hours were in deep water.

Some REMARKS, &c. on the West Coast of SUMATRA, by Capt. Manley.

B-n.
coolen.

THE river and old fort of Bencoolen lie in a deep bay; none living there now but Malays. The new fort, or Fort Marlborough, stands upon a hill, over Ozang-Corang, which in the Malay language is a point of rocks, and is now called Marlborough Point.

Coming from the Northward or Southward, into Bencoolen Road, you will see P°. Tecoose, or Rat Island, at least 5 or 6 leagues, if clear weather (b). When you anchor in the road, the nearer the island the deeper the water, and foul ground: But the best anchoring is mid-way, between the island and South breakers, in about 10 or 12 fathoms, oazy ground. Rat Island, SW. the Sugar-loaf NE. P°. Point SSE. Fort Marlborough ENE $\frac{1}{2}$ N. the Black Rock SE.

The marks for going in to the Corang, through the North channel (which you ought always to do with the wind Northerly) bring the Sugar-Loaf and Rat Island NE. and SW. then steer right in for the Sugar-Loaf, and you will go mid-channel between the North and South breakers; if a small vessel, or any thing larger than a long-boat, keep the lead going, and do not come into less than 4 fathoms, and as you round the South breakers give them a good birth; if they do not break you will always see a swell on them, and when you have the fort or flag-staff well open to the N. Eastward of the large Cocoa-nut Grove, that stands by the water side, you may steer right in for the Corang, or the Red Cliff, keeping the fort or flag-staff on the larboard bow, or as you see necessary, according as you have the wind; you will always see the channel, going in there; but be sure, as you go in, to allow the rocks off the point on the starboard bow a good birth, then you may steer for the jetty-head.

When you have the wind Southerly always go through the South channel with your boats, which is between the South breakers and the Point of rocks on the starboard side going in. You must keep well near those rocks, lest the current and swell heave you on the South breakers. Observe in going on shore, from the ship, through the South channel, to keep the fort or flag-staff open to the Southward of the Large Cocoa-nut Grove by the water side, 'till you come pretty near the shore breakers, or breakers on the South point: When you have the channel well open, as you will see by the swell over the South breakers; then keep right in with the Sugar-Loaf, 'till you open the fort or flag-staff well to the NE. of the Cocoa-nut Grove, as before directed, for the North channel. When you are under the Red Cliff, keep along shore for the jetty-head. The rocks above mentioned make a convenient place for boats where no wind or sea can hurt them (i).

Sillabar.

Sillabar lies about 4 leagues SE. of Fort Marlborough, in the bottom of a bay; there lies about mid-way between both places, a large range of rocks, called Black Rock, which breaks very high, and may be easily seen and avoided, being rarely concealed: There is generally a rolling swell on the shore. Sillabar River and Residency lies in the bottom of the bay, the Pagger standing on the starboard side of the river, about a mile up; from thence to P°. Point

(b) It has been observed, coming from the Northward, that Rat Island is not to be seen, even from the mast-head, until the Sugar-Loaf bears due East.

(i) When it blows any thing fresh, boats lie along-side the ships with great difficulty, and sometimes cannot at all. At Mocha-mocha, Bental and Triamong, it is much the same; but at Ippoe, without any thing extraordinary to raise the swell, they have been known to roll their guns in the water; for which cause much care ought to be taken of the services of the cables, they are frequently wanting to be mended.

about 2 or 3 miles further, a good place for ships to lie at in the NW. monsoon, lying always smooth and sheltered from any wind, if within the rocks.

Three leagues WNW. from P°. Point lies a large ledge of rocks, on which there is not above 14 feet water; they do not at all times shew themselves, but lie very dangerous, and sometimes break very high. P°. Point, at Sillabar, is a very low point, with one tall tree surmounting the rest upon it; this point extends itself to the WNW. towards the sea, with a reef of rocks breaking a considerable way from it.

Three or four leagues to the S. Eastward of this point is a round bluff point, called Buffalo Point (which may be seen in Bencoolen Road); there is good anchoring for shipping off it, as to the ground and depth of water; but open to the sea, from 7 fathoms to what depth you please, soft ground. There is a Doosam or village inhabited, but a very bad bar, which makes it not used by boats. Buffalo Point.

From Buffalo Point to Manna Point is 10 or 11 leagues. It has been a very erroneous Manna. opinion, that there are no soundings to the Southward of Buffalo Point, for we this voyage found good and regular soundings from Manna to Buffalo Point, from 12 to 30, 40, 50, 60, and 70 fathoms, sandy ground, and where you may anchor if occasion requires; but when past Manna Point, to the SE. between that and P°. Pissang, could get no ground 'till near Fortune Island (k); and there you lose soundings.

N. B. There is generally a great swell on the shore, all along the coast.

From BENCOOLEN towards MOCHA-MOCHA.

In sailing along shore to the Northward be sure you give Single Demoon Point a good birth, by reason of the foul ground and rocks that lie a considerable way off it. Your best way is to keep the shore on board, that you may not be deceived by the high land, which oftentimes shews itself in many different shapes, according to the weather. A little to the Northward of Single Demoon Point you will see red cliffs, when you may run into what depth you please, as 9, 10, and 11 fathoms, and out to 20 fathoms. You will meet with good oazy ground for anchoring all the way, if occasion requires, 'till you come near Ippoe (as hereafter mentioned) when you will lose sight of the Red Cliffs. Single Demoon Point.

From Bencoolen to Catown is about 10 or 11 leagues, NWbN. it appears with an opening between the Red Cliffs like a river: From thence NW. about 4 or 5 leagues further lies Sibblat, which appears also with an opening between the Red Cliffs like Catown. Catown and Sibblat.

From Sibblat to Ippoe, the course is NW. 4 or 5 leagues. To the SW. of Ippoe there runs out a bank of foul ground from the shore, extending near 2 leagues into the sea: You will find upon it from 6 to 10 fathoms, large coral: On the outermost edge of it there lies a coral-rock, SWbS. 2 leagues from Ippoe, with no more than 14 feet water on it (l), and from 8 to 16 fathoms round it; but come no nearer than 10 fathoms, it being very steep, and but a little way off it 30, 40, and 50 fathoms, and then presently no ground. When you bring Ippoe NEbE. you are to the Northward of the bank, and may safely stand into Ippoe Road, where you will see, a little to the Southward, three red cliffs, like country boat sails, called Tombongoes, and three green hills, if clear weather, without these; the middlemost of which is that on which the old Pagger stood, bearing NEbE. the extremities of land, from NNW. to SEbE. Large ships should come no nearer to anchor than 9 or 10 fathoms, the road being clear, but within is shoal water and foul ground. Ippoe.

Between Ippoe and Bantall are three rivers, Aijer Ruttah, Etam, and Triamong. Bantall lies about 7 leagues to the Northward of Ippoe, in a deep bay: You may stand into what depth you please, after you are past Ippoe; but keeping off shore, in soundings from 15 to 7 fathoms, you will find good ground, and even soundings: In crossing the bay for Bantall you will see a small red cliff, which is the North point of Triamong River, pretty low near the water's edge, and Bantall.

(k) This island, according to Capt. Norton Hutchinson, lies near E. and W. about 7 miles distance from Flatt Point, which makes a port of hook, forming a little bay, where a ship may ride with safety. Capt. Hall makes Fortune Island to lie in 5° 55' S. but Capt. Hutchinson, in taking his departure from Flatt Point, allows it in 5° 52' S. See the Directory, p. 129.

(l) On which the Swallow struck.

and is the only red cliff discernable between Ippoe and Mocha-mocha: When you see it you may be certain where you are, and then look out for Bantall River's mouth, which you may see as you advance to the Northward, if you keep in 6, 7 or 8 fathoms, as you may safely do; and a little to the Southward of some straggling pine-trees, you will see the houses and river's mouth, a little to the Northward whereof you will see two white cliffs, which in the offing appear much like boats sails: These marks, if clear weather, you may see a considerable way, and by which you may depend on knowing the places, in case you can see no other; it is a very good road to anchor in; when you have the river's mouth NE. and the two above-mentioned cliffs NNE. you are then in the best of the road, and may anchor in good sand and oazey ground, from 8 to 6 fathoms.

Fredrickett.

About 4 leagues NW. From Bantall is Fredrickett; its river has a large bar, which renders it unnavigable, even for boats: When you are near it you will see the river's mouth open, which you may easily discover, by a parcel of tall trees that stand thicker on each side of the river's mouth than any where else.

Mocha-mocha.

About 3 leagues NW. of Fredrickett lies Mocha-mocha: All the way between them is white sand, and generally a great swell, heaving in upon the shore. A little to the Northward of Fredrickett you will see a bluff point, full of trees, called Buffalo Point, which you must be sure, if bound to Mocha-mocha, to keep well on board, by rounding it in 6 or 7 fathoms, which you may do without danger; otherwise you may miss the port: After you are about it, you will see a tall spiral tree, which stands a little to the Northward of the river's mouth, appearing at first sight like a flag-staff, to the Southward of which, as you open the bay, you next see a long house, which makes like a row of buildings, being the Datta-Bugase's house: Then next look out for the flag-staff and pagger, which you will not see 'till you are shot well to the Northward. You may at pleasure anchor in Mocha-mocha road, from 6, 7, to 10, 11, or 12 fathoms, soft ground; the flag-staff bearing from NEbE. to SEbE. according to the monsoons, for conveniency of boats coming on board, or going on shore.

As you sail along shore, Mocha-mocha appears in the bottom of a small bay, and clear of trees when you have the bay well open: If to the Northward, you may see the houses and factory in the middle of the clear: On each side of the bay stands a row of tall pines, which make both extremes appear bluff; but in the morning, if not very clear, you can hardly see houses or factory, 'till the sun is 3 or 4 hours high above the land, by reason of the shade the land and trees make which are at the back of it.

WNW. about 3 leagues from the flag-staff there is foul ground, as rock and sand, by which, coming from the Northward, you may know you are near Mocha-mocha, in case you have not an opportunity of seeing the land or flag-staff: Soundings upon it from 35 to 18 and 11 fathoms, and doubtless less water, for it breaks very high.

Never depend on your distance run any where along this coast, as there are very strong currents, frequently running above 2 knots an hour, and very uncertain, being chiefly influenced by the shifting of the winds; for a twelve-hours gale along shore will occasion a current, as I have found by experience.

N. B. If a ship should be in want of water whilst she is to the Northward, the natives will bring it off to you: Their usual price has been 8 dollars for only 6 puncheons: But your own boat cannot supply you, by reason of the great surfs and shoal water there is on the bars.

Capt. D'Auvergne's Account of the Ship SCARBOROUGH striking on the SOUTH MAROONA, off the Coast of LUCONIA, Sept. 12, 1748.

Moderate gales and smooth water; the winds from N. to NNW. At sun-set I sent an officer to the mast-head to look out, the ship being near the latitude of a shoal, which in some draughts is laid down in 15° 10' N. and in others 10' more Northerly. The officer saw nothing.

As none of the company's ships have been on the coast of Luconia, except lately the Defence, Capt. Coates, and the Tigris, Capt. Petre; and as the draughts of the China seas are very erroneous, and vary greatly in their meridian distance between P°. Sapata and the coast of Luconia, and consequently in that of the Maroons: By comparing these with the meridian distance Capt. Petre made to the said coast, viz. $10^{\circ} 15' E$. I judged the Scarborough at noon was at least 30 leagues to the Westward of the Southernmost of the said shoals.

At 8 P. M. I sent a man to the bowsprit end, and another to the fore-yard, to look out; notwithstanding which the ship unfortunately struck at half an hour past 9: I directly caused all the sails to be laid aback, and though the ship went on easily, yet she would not back off. The wind, when the ship struck, was at NNW. By sounding round the ship, I found she hung only forwards, having 38 fathoms astern, and 17 fathoms a mid-ships: I therefore ordered all the guns to be brought aft, and 40 odd butts of water started in the fore-hold, and all that could be moved aft, to be brought thither; all which proved insufficient: I then ordered all the boats out to sound, and the stream anchor was soon after carried to the Westward, in the only place where an anchor could be laid: It was hove on, but to no purpose; for the anchor was on the beam, and the ship's fore foot, I suppose, lay between two rocks.

A squall from the Westward cast the ship's starboard bidge on the rocks, 'till which time she did not beat, but lay without any motion, as the sea, when she struck, was very smooth; but the squall being right on the shoal made a little swell; however, it did not last long. Finding the ship thumped somewhat hard on the starboard bidge, it was judged necessary to lighten her; on which I ordered all her guns to be thrown overboard.

While the ship was on the shoal, the water was perceived to fall from the rocks, and before she got off to rise again, which makes me believe the ship struck at high water (*m*). It was new-moon this day.

The ship still remaining fast, the kedge anchor was therefore carried out astern, though I expected but little good from it, there being such deep water, that the cable was almost right up and down; however, when the ship was hove thereon, she began to come off; but this I attribute more to the rising of the water than the heaving; for the ship's fore-foot being between two rocks, the stream anchor was of no service, and the kedge anchor was a-weigh before the ship was quite off.

At half an hour past 6 A. M. the ship's head payed round off; so that rather than run the risque of bringing her up, and casting the wrong way, if I stayed to have the stream anchor hove up, I ordered the cable to be cut at the bitts; and, under the blessing of God, the ship got off and made no water.

I made $6^{\circ} 35'$ East meridian distance from P°. Sapata, when the ship struck in the latitude of $15^{\circ} 6' N$. (*n*).

At day-light the rocks appeared frightful, though it pleased God the ship was on the sea side of the shoal, which is at least 2 leagues over, and 8 long: On the East side of the shoal, the rocks are almost as high as those of Scilly, and a terrible sea breaks over them: On the West side they are no bigger than a boat: They seemed to lie about NNW. and SSE. I think the Scarborough was near the North end of them, seeing the water blew to the Northward of them, and rocks were seen SEbS. 3 leagues from the ship.

(*m*) It rather seems to have been about $\frac{1}{2}$ ebb, (according to the time of the ship's striking, and getting off, and the general rule of tides ebbing and flowing) and about high water when they got off; for, had it ebbed but ever so little when she struck, and lay as she did, the falling water, with her fore foot between two rocks as here described, her weight would jam her so tight, that a little rising water would not have set her free again.

(*n*) Some other remarks I have, make this shoal in $15^{\circ} 10' N$. and $9^{\circ} 10' E$. from P°. Sapata. Capt. Webb, in September, 1751, made but $6^{\circ} 52'$ E. meridian distance from P°. Sapata to the sight of Luconia, about 15 leagues distance, in latitude about $17^{\circ} N$. They experienced a current to the Northward, which doubtless set strong to the Eastward withal: They were 16 days on their passage from one to the other. I therefore imagine, (if there is no mistake in the copy) as those remarks do not mention the time of year, the voyage was made in the contrary season, when they had the current set as strong to the Westward.

That my misfortune may be a warning to others, who have the honour to navigate the honourable company's ships in these seas, and intend to go on the coast of Luconia, at the latter end of the SW. monsoon, in order to save their passage to Canton, which is the surest way; I advise them not to come to the Northward of $14^{\circ} 14' N.$ before they are sure of being within this shoal; but, if they do not intend to go on the coast of Luconia, then I advise them not to make more than $5^{\circ} 30'$ East meridian distance from P° . Sapata.

This shoal goes under different names, being called by the Portuguese Cabeça or Calebassos dos Negros, by the Spaniards Marfingola, and by the Dutch Zee-slang, or the Sea-serpent, having that shape in their charts; but I believe it is best known to the English by the name of the South Maroona; I have therefore called it so. On this shoal are 3 small rocks above water, resembling, at a small distance, Negroes heads. The Scarborough went on close to one of them, and near the three.

The North Maroona, or Double-headed Shot, called by the Spaniards Baxa Boliana, by most accounts lies nearly North from the other, or however not above 5 leagues more Westerly. These shoals are reckoned to lie about 25 leagues from the coast of Luconia.

In the latitude of $14^{\circ} 15' N.$ and about 12 leagues SSE. from the South Maroona, lies another shoal, universally called Baxos Mirabilis; these three shoals make all the channels to the coast of Luconia very narrow, and, as they are out of sight of the coast, very dangerous.

INSTRUCTIONS *for sailing from* MADRAS *to* PEGU, *in the* LITTLE and GREAT MONSOONS.

IF you sail from Fort St. George, for Pegu, in the Little Monsoon, that is, by the 25th of April, it is convenient to keep well to the Southward, by reason the last full or change of the moon in April, or the first full or change in May, you have generally blowing weather from that quarter; but if you find the wind to stand good at SW. shape your course to go through the 14° channel, which is between the Great Andaman and the Cocos Islands, keeping as near the Andamans as possible; and, as soon as you are through, stand E. or EbS. if you can, and go within a league or two of the island Narcondam, which is very high land, in latitude $13^{\circ} 19' N.$ and when you are 10 or 12 leagues to the Eastward thereof, your passage is secure.

If you do not sail before the middle of May, the monsoon is then set in, and you may keep between the latitudes of $13\frac{1}{2}^{\circ}$ and 14° , but do not go to the Northward of 14° , and go through the said channel as above. At this time of the year, if your glass be true, and the log well kept, you will make the Andamans when you have made about 10° Easting: When you are through the channel steer E. or EbS. and when the Island Narcondam bears South, 2 or 3 leagues, you may steer ENE. NEbE. or NE. 'till you have made $2\frac{1}{2}^{\circ}$ Easting from the said island: For this run, be sure to keep the log well, then steer North for Siriam Bar, and keep a good look-out to the Eastward, for if you are 5 leagues to the Eastward thereof, in clear weather, you will certainly see the high land of Martaban; and, if you do not see the said land, you may conclude you are not so far to the Eastward of the bar. Ships that come on the Pegu coast, at this time of the year, ought to be well provided with good anchors and cables, for should you be obliged to ride out a full or change, the latter end of May, or the beginning of June, you will certainly ride very hard, being shoal water and very strong tides, which run 5, 6, and 7 knots, and flow from 18 to 21 feet. If on the springs you chance to meet with dark dirty weather, ride it out in $8\frac{1}{2}$ or 9 fathoms; and, when you would deal with the coast, do not venture under 6 fathoms, 'till you see the land, and know where-about you are. If you meet with stiff soundings, mud or clay, in $6\frac{1}{2}$, or $7\frac{1}{2}$, or 8 fathoms, then you

may be assured you are to the Eastward of the bar, for to the Westward is all soft oaze. These stiff soundings are the best mark in blowing weather, but in fair weather, when you can set the tides, you may know thereby whether you are to the Eastward or Westward of the bar, for all along to the Westward of the bar, the tides set to the N. Eastward, or more Easterly; whereas all along to the Eastward of the bar they set NNE. and NbE. wherefore, if you happen to fall into these latter tides way, you may depend upon it you are to the Eastward of the bar; therefore come away to the Westward with the ebb as soon as you can: In these tides way you meet with the aforesaid stiff soundings. I never knew any who were exact in running the before-mentioned Easting, but they fell in with the bar very well, not exceeding 4 or 5 miles on either side.

If you sail from Madras, in the Great Monsoon, that is, in the month of September, when you have made about $11^{\circ}\frac{1}{2}$ Easting, and in the latitude of $13^{\circ} 40' N.$ or thereabouts, you will see the land of Andaman. Some have made 13° Easting, which I believe to be the fault either of the glass or log. After you are through the channel, follow the directions aforesaid, at least as near as you can; but if you should meet with calms, as most do who sail late, strive for anchoring ground; however, take care you do not fall to the Westward of Baragou Point. After you have anchoring ground, be sure to keep it (for if you lose it, you run a great risque of losing your passage) and get into 7 or 8 fathoms, as opportunity presents; then sail along shore, in $6\frac{1}{2}$ or 7 fathoms, keeping your lead going, at least twice a glass, and when you find your water deepen a fathom or thereabouts, you are the length of Siriam Bar, where is the deepest water of any along the coast.

Keep a good look-out for the mark of the bar, which is 5 or 6 palmira trees and aloes to the Westward of the river's mouth; but there are several on the Eastern shore, and to the Eastward of them the trees have smooth tops, and like a wood: These are the best marks to know the river by.

Bring the palmira trees on the West side of the river $NW\frac{1}{2}W.$ and stand in NNE and North for the bar; and as soon as you have the river's mouth open, stand in NNW. or more Westerly, as judgment shall direct. After you are over the bar, the river is wide enough: The best time for going over is at half or three-quarters flood, for then the tide sets NNE. and North; but the first of the flood the tide makes to the Eastward very strong: If it be clear weather, you may see the high land of Martaban, when you are within Siriam or Pegu bar.

About the meridian of the bar, in 9, 10, or 11 fathoms, the water will be very white and thick, and the soundings soft and oazy; but to the Eastward of the bar the water is green, and the soundings blue mud, somewhat stiff.

Between the False River and Chinabuckear, or Chinabacore, are small soundings for the distance of 4 or 5 leagues, so that you will be obliged to steer more Easterly; and as soon as you begin to deepen your water, you are then near Chinabuckear; so that if you fall in with the land to the Westward of Siriam, be sure to mind your soundings, for I do not know any mark on the land that will direct you, 'till you are off Chinabuckear; and there is a great tree or a group of trees, a little to the Westward of the river's mouth, which makes like an old chapel or barn, and is the best mark to know Chinabuckear by.

N. B. It is high water on Siriam Bar, full and change, at $\frac{3}{4}$ past 3 o'clock.

A R E M A R K concerning the O U R A S.

In the year 1728, the Compton, Capt. Misener, bound for Coast and Bay, in latitude $0^{\circ} 55' S.$ discovered 3 rocks, about the height of his main-top above water. He made thence Eastward to the Friar's-hood on Zeloan about $40'$; and supposed it to be the Ouras laid down in the charts to the Northward of the Line.

REMARKS

REMARKS *for* VISIAGAPATAM ROAD.

PIGEON Island, the only one on the coast, lies close in shore, and cannot be distinguished as an island, at any distance, but appears in a small round hummock: The coast abreast the island is a high sand-bank, the Easternmost part whereof is full of trees.

When Pigeon Island bears North, distance 6 or 7 miles, the Dolphin's Nose, which is the Westernmost point of Visiagapatam road, may be distinguished: There is a large mosque on the top of it, but not easily seen 'till pretty near, because it stands on the Easternmost declivity of the hill.

To anchor, bring the two high cocoa-nut trees, which grow before the fort, in one; then the river's mouth will be open to you, and in 12 fathoms you have good ground for a large ship; but you must bend your best bower cable to an anchor of about 16 Cwt. otherwise it will be impossible for you to weigh it: Or bring the mosque NW. or NW $\frac{1}{4}$ W. and anchor 9 $\frac{1}{2}$ or 10 fathoms.

N. B. The bar lies within the Dolphin's Nose.



The PROGNOSTICK of a TUFFOON, on the Coast of CHINA, &c.
By ANTONIO PASCAL DE ROSA, a Portuguese Pilot
MACAO.

IN the China seas, on the 18th or 19th day of the moon's age, if the sun sets angry, making the horizon in that quarter of a very deep red, and tinging the clouds with the same colour, a storm certainly follows, increasing speedily from a small air at NE. (from which quarter it is generally found to blow the hardest) to a prodigious hard gale, about midnight veering to the East and South round to the Westward: When the wind veers to the SW. the violence is abated: But when these appearances are attended with thunder and lightening, nothing is to be feared but sudden squalls, of short continuance (o).

I have been an eye-witness of ships oversetting in these seas, by officers despising the prognostick, and neglecting to take in the sails in time: I would therefore advise keeping only the fore sail abroad, in order to run before it, for the sea rises very confusedly, so that lying-to is often fatal.

N. B. I do not affirm, that the 18th and 19th days of the moon's age are the only periods when a Tuffoon is to be feared.

(o) Thunder and lightening being the reverse on that coast of what it is on any other.